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An ISO 9001, ISO 14001 & OHSAS 18001

Certified Company



SEML/ENV/CM/5606

29.09.2023

To,
The Member Secretary,
Chhattisgarh Environmental Conservation Board,
Paryavash Bhawan, North Block, Sector -19
Atal Nagar, Nava Raipur 492002 (C.G.)

Sub: Submission of Environmental Statement for the year 2022-23 of Gare Palma IV/7 Coal Mine, Sarda Energy & Minerals Limited, Located at village Karwahi, Khamaria & Other, Tehsil - Tamnar, Dist - Raigarh (C.G.).

Dear Sir,


We are enclosing herewith the Environmental Statement for the year 2022-23 of our Gare Palma IV/7 Coal Mine, Sarda Energy & Minerals Limited Located at village Karwahi, Khamaria & Other, Tehsil - Tamnar, Dist - Raigarh (C.G.) as per the notification of Ministry of Environment, Forest & Climate Change (MoEF&CC), Government of India under the Environment Protection Amendment Rule, 1993.

For your kind perusal please.

Kindly acknowledge receipt of the same.

Thanking you,

Yours faithfully,
For Sarda Energy & Minerals Limited,


P.S. Dutta Gupta
Authorized Signatory

Encl: a/a.

Copy to: The Regional Officer, Regional Office Chhattisgarh Environment Conservation Board, T.V. Tower Road, Raigarh (C.G.)



ENVIRONMENTAL STATEMENT

2022 – 2023

**AS PER
PROVISION OF
ENVIRONMENTAL PROTECTION AMENDMENT
RULES 1993**

FOR



SARDA ENERGY & MINERALS LIMITED

**Gare Palma IV/7 Open Cast Coal Mine
Located at Village- Karwahi, Khamaria, Bajarmuda & others
Tehsil- Tamnar, District- Raigarh
Chhattisgarh**



SARDA ENERGY & MINERALS LTD.

PART – A

NAME & ADDRESS OF INDUSTRY

SARDA ENERGY & MINERALS LIMITED OPEN-CAST
COAL MINE, GARE PALMA IV/7,
VILL. – KARWAHI & OTHERS
TEHSIL – TAMNAR,
DISTRICT – RAIGARH (C.G.)

NAME AND ADDRESS OF FULL-TIME DIRECTOR OF INDUSTRY

1. **KAMAL KISHORE SARDA**

18/19, Anupam Nagar, Raipur

2. **PANKAJ SARDA**

18/19, Anupam Nagar, Raipur

CATEGORY

Medium Scale

PROCESS

Mining of Coal

DATE OF THE LAST ENVIRONMENTAL STATEMENT SUBMITTED

Mine was Re- Commissioned on 14.12.2021



SARDA ENERGY & MINERALS LTD.

PART – B

PRODUCT DETAILS

| NAME OF PRODUCT | LICENSE CAPACITY (TPA) | ACTUAL PRODUCTION MT | |
|-----------------|------------------------|----------------------|------------------|
| | | 2021 – 2022 | 2022-2023 |
| Coal | 12,00,000.00 | 7,86,142 Tonnes | 11,99,998 Tonnes |

RAW MATERIAL CONSUMPTION

The main raw material for Coal Mining are explosives, the consumption of the same in the year 2021-2022 & 2022-2023 is shown below.

| Sr. No. | NAME OF MATERIAL | UoM | Amount Consumed | |
|---------|--|------------|--|--|
| | | | During the previous financial year 2021 – 2022 | During current financial year 2022– 2023 |
| 1. | Ordinary/ Electric Detonator a) Non-Electric Detonator b) Electric Detonator | Mtr No. | 137834 Nos. 403 Nos | 412541 Nos 1339 Nos |
| 2. | Safety Fuse | Mtr. | 45915 | 81340 |
| 3. | Power Gel | Kg | 327700 | 947350 |
| 4. | If any material (Booster) | Kg | NIL | 3759 |

FUEL CONSUMPTION

Fuel oil is used as fuel for D.G. sets, which are used for power generation in the mines. The consumption of fuel oil in the year 2021-22 and 2022-23 is as follows:

| S. N. | Fuel Oil | 2021-2022 | 2022 – 2023 |
|-------|----------|-------------|--------------|
| 1. | H. S. D. | 7950 Litres | 30900 Litres |



SARDA ENERGY & MINERALS LTD.

WATER CONSUMPTION

For coal mining, no process water is required. However for the auxiliary purpose such as dust suppression, plantation and domestic requirement, ground water is drawn from the bore wells. The water consumption in the year 2021-22 and 2022-23 is shown below.

| S. No. | PURPOSE | QUANTITY | QUANTITY |
|--------|--------------------------------------|-------------------------------------|------------------------------------|
| | | 2021 – 22 (14 Dec 2021 – Mar 22) | 2022 – 2023 (Apr. 22 – Mar. 23) |
| | (FROM BOREWELLS) | | |
| 1 | DOMESTIC | 1450 | 4500 |
| | FROM MINE DEWATERING | | |
| | INDUSTRIAL WATER | | |
| 1 | DUST SUPPRESSION, SPRINKLING etc. | 42000 | 108000 |
| 2 | PLANTATION | 875 | 2230 |
| | | | |
| 3 | WET DRILLING | 1050 | 3600 |
| | | | |
| 4 | WORKSHOP/WASHING | 350 | 1200 |
| | | | |
| 5 | FIRE FIGHTING | NIL | 3600 |
| | | | |
| 6 | WASHERY | 31930 | 109500 |
| | | | |
| | TOTAL | 77955 | 232630 |



PART – C

AMBIENT AIR QUALITY MONITORING RESULTS

| Result Summary (Average for the year 2021-22 i.e. Date of Commissioning to March, 2022) | | | | | |
|--|--|--|--|--|---|
| Location | PM 10 ($\mu\text{g}/\text{m}^3$) | PM2.5 ($\mu\text{g}/\text{m}^3$) | SO2 ($\mu\text{g}/\text{m}^3$) | Nox ($\mu\text{g}/\text{m}^3$) | CO (mg/m^3) |
| Near Weigh Bridge (Core Zone) | 84.1 | 42.7 | 8.4 | 23.0 | 0.752 |
| Pata Village (Buffer Zone) | 75.8 | 38.5 | 7.0 | 18.7 | 0.138 |
| Dholnara Village (Buffer Zone) | 79.2 | 40.4 | 7.3 | 19.6 | 0.144 |
| Milupara Village (Buffer Zone) | 81.3 | 41.2 | 7.5 | 21.7 | 0.182 |

| Result Summary (Average for the year 2022-23 i.e. April 2022 to March, 2023) | | | | | |
|---|--|--|--|--|---|
| Location | PM 10 ($\mu\text{g}/\text{m}^3$) | PM2.5 ($\mu\text{g}/\text{m}^3$) | SO2 ($\mu\text{g}/\text{m}^3$) | Nox ($\mu\text{g}/\text{m}^3$) | CO (mg/m^3) |
| Near Weigh Bridge (Core Zone) | 88.1 | 45.3 | 12.2 | 36.1 | 0.562 |
| Pata Village (Buffer Zone) | 81.8 | 41.0 | 7.9 | 21.2 | 0.156 |
| Dholnara Village (Buffer Zone) | 83.4 | 42.2 | 8.3 | 23.8 | 0.194 |
| Milupara Village (Buffer Zone) | 80.7 | 40.3 | 7.6 | 20.7 | 0.152 |

Annexures enclosed:



ENVIRO ANALYSTS & ENGINEERS PVT. LTD.

NABET Accredited & MoEF (Govt. of India) approved

CIN No. : U28900MH1995PTC093129



H. O. : B-1003, Enviro House, 10th Floor, Western Edge II, Western Express Highway, Borivali (E), Mumbai - 400 066.
• Tel. : +91 22 2854 1647 / 48 / 49 / 67 / 68 • E-mail : info@eaepl.com • Website : www.eaepl.com

EAEPL/AA/SEML/2022-23/005

Date: 13.04.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO _x $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 4.04.2022 | 84.1 | 42.7 | 8.4 | 23.0 | 0.752 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 4.04.2022 | 75.8 | 38.5 | 7.0 | 18.7 | 0.138 |
| 3. | Dholnara Village | 4.04.2022 | 79.2 | 40.4 | 7.3 | 19.6 | 0.144 |
| 4. | Milupara Village | 4.04.2022 | 81.3 | 41.2 | 7.5 | 21.7 | 0.182 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory

Nagpur Branch :
Shiv Kunj, Bungalow No. 65,
Old Verma Layout, Ambazari,
Nagpur - 440 010.
Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

Pune Branch:
Flat No. 11,
Taranikt Co. Op. Hsg. Soc. Ltd.,
City S. No. 209, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

Lab :
Row House No. 2, Shalom Garden,
Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107.
Tel. : 022-2811 8442

Workshop :
Plot No. E - 122,
MIDC Tarapur,
Boisar,
Dist. - Thane - 401 506.



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CIN No. : U28900MH1995PTC093129



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• Tel. : +91 22 2854 1647 / 48 / 49 / 67 / 68 • E-mail : info@eaepl.com • Website : www.eaepl.com

EAEPL/AA/SEML/2022-23/021

Date: 8.06.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 30.05.2022 | 88.3 | 44.1 | 8.7 | 25.7 | 0.810 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 30.05.2022 | 78.7 | 40.3 | 7.2 | 19.4 | 0.146 |
| 3. | Dholnara Village | 30.05.2022 | 81.2 | 41.0 | 7.4 | 20.3 | 0.133 |
| 4. | Milupara Village | 30.05.2022 | 83.0 | 41.7 | 7.8 | 20.9 | 0.176 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

For Enviro Analysts & Engineers Pvt. Ltd.

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Telefax : 0712 - 2241 838

Pune Branch:
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City S. No. 209, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

Lab :
Row House No. 2, Shalom Garden,
Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107.
Tel. : 022-2811 6442

Workshop :
Plot No. E - 122,
MIDC Tarapur,
Boisar,
Dist. - Thane - 401 505.





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EAEPL/AA/SEML/2022-23/032

Date: 2.07.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
 (1.2MTPA Coal Mines)
 Vill: Karwahi, Khamaria Bajarmuda & Others
 Tehsil: Tamnar, District: Raigarh (C.G.)

Sample Particulars : Ambient Air Quality

Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 07.06.2022 | 90.5 | 45.0 | 9.1 | 29.3 | 0.832 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 07.06.2022 | 80.3 | 41.2 | 7.5 | 20.5 | 0.148 |
| 3. | Dholnara Village | 07.06.2022 | 84.1 | 42.0 | 7.7 | 21.2 | 0.151 |
| 4. | Milupara Village | 07.06.2022 | 86.7 | 43.4 | 7.4 | 22.4 | 0.168 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory



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NABET Accredited & MoEF (Govt. of India) approved

CIN No. : U28900MH1995PTC093129



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EAEPL/AA/SEML/2022-23/053

Date: 2.08.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 11.07.2022 | 74.6 | 37.0 | 7.8 | 23.6 | 0.370 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 11.07.2022 | 62.4 | 30.8 | 6.1 | 17.3 | 0.114 |
| 3. | Dholnara Village | 11.07.2022 | 66.7 | 32.3 | 6.5 | 18.5 | 0.120 |
| 4. | Milupara Village | 11.07.2022 | 65.8 | 31.6 | 6.3 | 17.9 | 0.117 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

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Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

Pune Branch:
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City S. No. 208, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

Lab :
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Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107,
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Workshop :
Plot No. E - 122,
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Dist. - Thane - 401 506.



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EAEPL/AA/SEML/2022-23/064

Date: 30.08.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 9.08.2022 | 71.3 | 35.6 | 7.1 | 21.4 | 0.267 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 9.08.2022 | 58.9 | 28.2 | 5.3 | 16.4 | 0.110 |
| 3. | Dholnara Village | 9.08.2022 | 62.7 | 30.4 | 6.0 | 17.2 | 0.116 |
| 4. | Milupara Village | 9.08.2022 | 60.3 | 29.6 | 5.7 | 16.6 | 0.112 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

For Enviro Analysts & Engineers Pvt. Ltd.

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Telefax : 0712 - 2241 836

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EAEPL/AA/SEML/2022-23/073

Date: 29.09.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|---|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 5.09.2022 | 76.6 | 38.2 | 7.5 | 23.2 | 0.280 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 5.09.2022 | 64.6 | 31.7 | 5.5 | 18.3 | 0.124 |
| 3. | Dholnara Village | 5.09.2022 | 71.3 | 35.6 | 6.7 | 19.3 | 0.128 |
| 4. | Milupara Village | 5.09.2022 | 70.7 | 35.2 | 6.4 | 18.8 | 0.120 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
Shiv Kunj, Bungalow No. 65,
Old Verma Layout, Ambazari,
Nagpur - 440 010.
Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

Pune Branch:
Flat No. 11,
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Tel. : 020-2432 4444

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CIN No. : U28900MH1995PTC093129



H. O. : B-1003, Enviro House, 10th Floor, Western Edge II, Western Express Highway, Borivali (E), Mumbai - 400 066.
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EAEPL/AA/SEML/2022-23/082

Date: 27.10.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 12.10.2022 | 79.7 | 40.5 | 8.4 | 26.1 | 0.312 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 12.10.2022 | 68.5 | 34.0 | 6.2 | 19.7 | 0.134 |
| 3. | Dholnara Village | 12.10.2022 | 73.8 | 37.4 | 6.9 | 20.1 | 0.140 |
| 4. | Milupara Village | 12.10.2022 | 72.0 | 36.5 | 6.7 | 19.4 | 0.132 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
Shiv Kunj, Bungalow No. 65,
Old Verma Layout, Ambazari,
Nagpur - 440 010.
Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

Pune Branch:
Flat No. 11,
Tarankit Co. Op. Hsg. Soc. Ltd.,
City S. No. 209, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

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100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107.
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CIN No. : U28900MH1995PTC093129



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EAEPL/AA/SEML/2022-23/093

Date: 22.11.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 9.11.2022 | 73.5 | 38.4 | 8.6 | 27.3 | 0.358 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 9.11.2022 | 70.1 | 34.7 | 6.6 | 20.8 | 0.139 |
| 3. | Dholnara Village | 9.11.2022 | 72.2 | 36.6 | 6.9 | 21.2 | 0.152 |
| 4. | Milupara Village | 9.11.2022 | 73.0 | 37.7 | 7.2 | 22.4 | 0.146 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

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Tel. : 020-2432 4444

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Opp. Kanakia College,
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Tel. : 022-2811 6442

Workshop :
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EAEPL/AA/SEML/2022-23/107

Date: 29.12.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|---|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 8.12.2022 | 76.1 | 40.2 | 9.3 | 29.2 | 0.370 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 8.12.2022 | 72.4 | 36.1 | 6.8 | 21.7 | 0.132 |
| 3. | Dholnara Village | 8.12.2022 | 75.5 | 38.0 | 7.3 | 23.4 | 0.160 |
| 4. | Milupara Village | 8.12.2022 | 75.2 | 38.5 | 7.5 | 24.0 | 0.156 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

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EAEPL/AA/SEML/2022-23/121

Date: 30.01.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|---|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 18.01.2023 | 80.7 | 42.4 | 10.8 | 32.4 | 0.394 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 18.01.2023 | 75.3 | 38.4 | 7.1 | 22.0 | 0.138 |
| 3. | Dholnara Village | 18.01.2023 | 78.6 | 39.5 | 7.5 | 24.1 | 0.165 |
| 4. | Milupara Village | 18.01.2023 | 77.2 | 39.1 | 7.8 | 25.3 | 0.168 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

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EAEPL/AA/SEML/2022-23/128

Date: 27.02.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 6.02.2023 | 83.4 | 44.1 | 11.5 | 33.7 | 0.422 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 6.02.2023 | 78.7 | 40.2 | 7.6 | 19.6 | 0.144 |
| 3. | Dholnara Village | 6.02.2023 | 80.3 | 41.0 | 7.8 | 21.3 | 0.172 |
| 4. | Milupara Village | 6.02.2023 | 75.8 | 38.3 | 7.2 | 18.5 | 0.140 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

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EAEPL/AA/SEML/2022-23/151

Date: 29.03.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G.)
Sample Particulars : Ambient Air Quality
Duration of Sampling : 24hrly

TEST REPORT

| Sr. No. | LOCATION | Date of sampling | PM 10 $\mu\text{g}/\text{m}^3$ | PM 2.5 $\mu\text{g}/\text{m}^3$ | SO ₂ $\mu\text{g}/\text{m}^3$ | NO ₂ $\mu\text{g}/\text{m}^3$ | CO mg/m^3 |
|--|-------------------|------------------|--------------------------------|---------------------------------|--|--|---------------------------|
| Core Zone | | | | | | | |
| 1. | Near Weigh Bridge | 21.03.2023 | 88.1 | 45.3 | 12.2 | 36.1 | 0.562 |
| Buffer Zone | | | | | | | |
| 2. | Pata Village | 21.03.2023 | 81.8 | 41.0 | 7.9 | 21.2 | 0.156 |
| 3. | Dholnara Village | 21.03.2023 | 83.4 | 42.2 | 8.3 | 23.8 | 0.194 |
| 4. | Milupara Village | 21.03.2023 | 80.7 | 40.3 | 7.6 | 20.7 | 0.152 |
| CPCB Standards | | | | | | | |
| Industrial, Residential, Rural and other Area | | | 100 | 60 | 80 | 80 | 2 |

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SARDA ENERGY & MINERALS LTD.

Fugitive Dust Monitoring

| Result Summary (Average for the year 2021-22 i.e. Date of Commissioning to March, 2022) | |
|---|----------------------------------|
| Location | SPM ($\mu\text{g}/\text{m}^3$) |
| Near Weigh | 832 |
| Near Stockyard (Loading & Unloading) | 570 |
| Nera OB Dump | 734 |
| Near Haul Road | 688 |

| Result Summary (Average for the year 2022-23 i.e. April 2022 to March, 2023) | |
|--|----------------------------------|
| Location | SPM ($\mu\text{g}/\text{m}^3$) |
| Near Weigh | 910 |
| Near Stockyard (Loading & Unloading) | 694 |
| Nera OB Dump | 702 |
| Near Haul Road | 734 |

Annexures enclosed:



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CIN No. : U28900MH1995PTC093129



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EAEPL/FE/SEML/2022-23/005/1

Date: 13.04.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 5.04.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 832 |
| 2 | Near OB Dump No. 2 | 570 |
| 3 | Near Haul Road for Dump No. 1 | 734 |
| 4 | Near Haul Road for Dump No. 2 | 688 |
| | CPCB Standards | 1200 |

For Enviro Analysts & Engineers Pvt. Ltd.

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Tel. : 022-2811 6442

Workshop :
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EAEPL/FE/SEML/2022-23/021/1

Date: 8.06.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 31.05.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 894 |
| 2 | Near OB Dump No. 2 | 608 |
| 3 | Near Haul Road for Dump No. 1 | 755 |
| 4 | Near Haul Road for Dump No. 2 | 702 |
| | CPCB Standards | 1200 |

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Pune Branch:
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EAEPL/FE/SEML/2022-23/032/1

Date: 2.07.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G.)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 8.06.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 920 |
| 2 | Near OB Dump No. 2 | 652 |
| 3 | Near Haul Road for Dump No. 1 | 770 |
| 4 | Near Haul Road for Dump No. 2 | 748 |
| | CPCB Standards | 1200 |

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EAEPL/FE/SEML/2022-23/053/1

Date: 2.08.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 12.07.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 674 |
| 2 | Near OB Dump No. 2 | 488 |
| 3 | Near Haul Road for Dump No. 1 | 532 |
| 4 | Near Haul Road for Dump No. 2 | 566 |
| | CPCB Standards | 1200 |

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EAEPL/FE/SEML/2022-23/064/1

Date: 30.08.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 10.08.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 558 |
| 2 | Near OB Dump No. 2 | 452 |
| 3 | Near Haul Road for Dump No. 1 | 476 |
| 4 | Near Haul Road for Dump No. 2 | 493 |
| | CPCB Standards | 1200 |

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City S. No. 209, B/1, Sadashiv Peth,
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EAEPL/FE/SEML/2022-23/073/1

Date: 29.09.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G.)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 6.09.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 634 |
| 2 | Near OB Dump No. 2 | 528 |
| 3 | Near Haul Road for Dump No. 1 | 532 |
| 4 | Near Haul Road for Dump No. 2 | 570 |
| | CPCB Standards | 1200 |

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L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030,
Tel. : 020-2432 4444

Lab :
Row House No. 2, Shalom Garden,
Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107,
Tel. : 022-2611 6442

Workshop :
Plot No. E - 122,
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Bolsar,
Dist. - Thane - 401 506.



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EAEPL/FE/SEML/2022-23/082/1

Date: 27.10.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 13.10.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 691 |
| 2 | Near OB Dump No. 2 | 563 |
| 3 | Near Haul Road for Dump No. 1 | 558 |
| 4 | Near Haul Road for Dump No. 2 | 610 |
| | CPCB Standards | 1200 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Nagpur - 440 010.
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Telefax : 0712 - 2241 836

Pune Branch:
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City S. No. 209, B/1, Sadashiv Peth,
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EAEPL/FE/SEML/2022-23/093/1

Date: 22.11.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G.)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 10.11.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 716 |
| 2 | Near OB Dump No. 2 | 580 |
| 3 | Near Haul Road for Dump No. 1 | 591 |
| 4 | Near Haul Road for Dump No. 2 | 646 |
| | CPCB Standards | 1200 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Tel. : 0712 - 2241 835,
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Pune Branch:
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City S. No. 209, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

Lab :
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Tel. : 022-2811 6442

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EAEPL/FE/SEML/2022-23/107/1

Date: 29.12.2022

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : Shrlly

Sampling Date : 9.12.2022

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 752 |
| 2 | Near OB Dump No. 2 | 606 |
| 3 | Near Haul Road for Dump No. 1 | 615 |
| 4 | Near Haul Road for Dump No. 2 | 633 |
| | CPCB Standards | 1200 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Pune Branch:
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Pune - 411 030.
Tel. : 020-2432 4444

Lab :
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Tel. : 022-2811 8442

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EAEPL/FE/SEML/2022-23/121/1

Date: 30.01.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 19.01.2023

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 798 |
| 2 | Near OB Dump No. 2 | 622 |
| 3 | Near Haul Road for Dump No. 1 | 634 |
| 4 | Near Haul Road for Dump No. 2 | 668 |
| | CPCB Standards | 1200 |

For Enviro Analysts & Engineers Pvt. Ltd.

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Pune Branch:
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EAEPL/FE/SEML/2022-23/128/1

Date: 27.02.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 7.02.2023

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 812 |
| 2 | Near OB Dump No. 2 | 658 |
| 3 | Near Haul Road for Dump No. 1 | 674 |
| 4 | Near Haul Road for Dump No. 2 | 706 |
| | CPCB Standards | 1200 |

For Enviro Analysts & Engineers Pvt. Ltd.

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Tel. : 020-2432 4444

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Tel. : 022-2811 6442

Workshop :
Plot No. E - 122,
MIDC Tarapur,
Boisar,
Dist. - Thane - 401 506.



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EAEPL/FE/SEML/2022-23/151/1

Date: 29.03.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.2 MTPA Coal Mines)
Vill: Karwahi, Khamaria & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 22.03.2023

TEST REPORT

| Sl. No. | Location | SPM $\mu\text{g}/\text{m}^3$ |
|---------|--------------------------------------|------------------------------|
| 1 | Near Stockyard (Loading & Unloading) | 910 |
| 2 | Near OB Dump No. 2 | 694 |
| 3 | Near Haul Road for Dump No. 1 | 702 |
| 4 | Near Haul Road for Dump No. 2 | 734 |
| | CPCB Standards | 1200 |

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Noise Monitoring Results

| Result Summary (Average for the year 2021-22 i.e. Date of Commissioning to March, 2022) | | |
|---|------|-------|
| LOCATION | DAY | NIGHT |
| Near Weigh Bridge | 61.8 | 56.3 |
| Pata Village | 46.5 | 41.7 |
| Near DG Set | 72.7 | 68.2 |
| Near Work Shop | 65.2 | 60.4 |

| Result Summary (Average for the year 2022-23 i.e. April 2022 to March, 2023) | | |
|--|------|-------|
| LOCATION | DAY | NIGHT |
| Near Weigh Bridge | 65.1 | 60.2 |
| Pata Village | 46.7 | 41.4 |
| Near DG Set | 73.8 | 67.2 |
| Near Work Shop | 66.3 | 61.7 |

Annexures enclosed:



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EAEPL/N/SEMI/2022-23/005

Date: 13.04.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 4.04.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 61.8 | 56.3 |
| 2 | Pata Village | 46.5 | 41.7 |
| 3 | Near DG Set | 72.7 | 68.2 |
| 4 | Near Work Shop | 65.2 | 60.4 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

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EAEPL/N/SEML/2022-23/021

Date: 8.06.2022

| | | |
|--------------------|---|--|
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| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 30.05.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 63.3 | 58.2 |
| 2 | Pata Village | 46.2 | 41.0 |
| 3 | Near DG Set | 73.1 | 68.5 |
| 4 | Near Work Shop | 66.7 | 61.4 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/N/SEML/2022-23/032

Date: 2.07.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 8.06.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 62.7 | 57.9 |
| 2 | Pata Village | 44.8 | 40.3 |
| 3 | Near DG Set | 72.8 | 67.7 |
| 4 | Near Work Shop | 64.3 | 60.5 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory

Nagpur Branch :
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Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

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EAEPL/N/SEML/2022-23/053

Date: 2.08.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 11.07.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 63.1 | 59.2 |
| 2 | Pata Village | 44.5 | 39.8 |
| 3 | Near DG Set | 72.4 | 67.3 |
| 4 | Near Work Shop | 62.8 | 58.8 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Nagpur - 440 010.
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Telefax : 0712 - 2241 836

Pune Branch:
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EAEPL/N/SEML/2022-23/064

Date: 30.08.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 9.08.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 61.7 | 58.6 |
| 2 | Pata Village | 44.1 | 39.5 |
| 3 | Near DG Set | 72.2 | 66.8 |
| 4 | Near Work Shop | 61.4 | 57.9 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.


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Nagpur Branch :
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Nagpur - 440 010.
Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

Pune Branch:
Flat No. 11,
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Pune - 411 030.
Tel. : 020-2432 4444

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Tel. : 022-2811 6442

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EAEPL/N/SEML/2022-23/073

Date: 29.09.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 5.09.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 63.0 | 59.5 |
| 2 | Pata Village | 44.3 | 40.6 |
| 3 | Near DG Set | 72.8 | 67.1 |
| 4 | Near Work Shop | 63.0 | 58.8 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Old Verma Layout, Ambazari,
Nagpur - 440 010.
Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

Pune Branch:
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City S. No. 209, B/1, Sadashiv Peth,
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Tel. : 020-2432 4444

Lab :
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Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107.
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Workshop :
Plot No. E - 122,
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EAEPL/N/SEML/2022-23/082

Date: 27.10.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 12.10.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 65.2 | 60.1 |
| 2 | Pata Village | 44.7 | 41.2 |
| 3 | Near DG Set | 73.3 | 67.5 |
| 4 | Near Work Shop | 62.4 | 58.0 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
Shiv Kunj, Bungalow No. 65,
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Nagpur - 440 010.
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EAEPL/N/SEML/2022-23/093

Date: 22.11.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 9.11.2022

| Sl. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 63.8 | 58.3 |
| 2 | Pata Village | 44.1 | 39.6 |
| 3 | Near DG Set | 72.9 | 65.8 |
| 4 | Near Work Shop | 61.6 | 57.5 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory

Nagpur Branch :
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Old Verma Layout, Ambazari,
Nagpur - 440 010.
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Pune Branch:
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City S. No. 209, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

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Opp. Kanakia College,
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EAEPL/N/SEML/2022-23/107

Date: 29.12.2022

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 8.12.2022

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 66.2 | 60.3 |
| 2 | Pata Village | 46.5 | 41.6 |
| 3 | Near DG Set | 73.3 | 66.4 |
| 4 | Near Work Shop | 63.7 | 60.8 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
Shiv Kunj, Bungalow No. 65,
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Tel. : 0712 - 2241 835,
Telefax : 0712 - 2241 836

Pune Branch:
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Taranik Co. Op. Hsg. Soc. Ltd.,
City S. No. 209, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

Lab :
Row House No. 2, Shalom Garden,
Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107.
Tel. : 022-2811 6442

Workshop :
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EAEPL/N/SEML/2022-23/121

Date: 30.01.2023

| | | |
|--------------------|---|--|
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| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 18.01.2023

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 64.8 | 59.7 |
| 2 | Pata Village | 45.7 | 40.2 |
| 3 | Near DG Set | 72.8 | 65.7 |
| 4 | Near Work Shop | 65.1 | 60.2 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Telefax : 0712 - 2241 836

Pune Branch:
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L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

Lab :
Row House No. 2, Shalom Garden,
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100 Feet Kanakia Road,
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EAEPL/N/SEML/2022-23/128

Date: 27.02.2023

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 6.02.2023

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 63.6 | 58.8 |
| 2 | Pata Village | 45.2 | 40.4 |
| 3 | Near DG Set | 73.4 | 66.2 |
| 4 | Near Work Shop | 67.1 | 63.3 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Telefax : 0712 - 2241 835

Pune Branch:
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Pune - 411 030.
Tel. : 020-2432 4444

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Row House No. 2, Shalom Garden,
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EAEPL/N/SEML/2022-23/151

Date: 29.03.2023

| | | |
|--------------------|---|--|
| Issued to | : | M/s Sarda Energy & Minerals Ltd. (1.2MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G) |
| Sample Particulars | : | Noise Monitoring Report |

Date of Sampling: 21.03.2023

| SL. NO. | LOCATION | RESULT (dBA) | |
|---------|-----------------------|--------------|-------|
| | | DAY | NIGHT |
| 1 | Near Weigh Bridge | 65.1 | 60.2 |
| 2 | Pata Village | 46.7 | 41.4 |
| 3 | Near DG Set | 73.8 | 67.2 |
| 4 | Near Work Shop | 66.3 | 61.7 |
| | CPCB Standards | | |
| | Industrial Area | 75 | 70 |
| | Residential Area | 55 | 45 |

For Enviro Analysts & Engineers Pvt. Ltd.


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Pune Branch:
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Tel. : 020-2432 4444

Lab :
Row House No. 2, Shalom Garden,
Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107.
Tel. : 022-2811 8442

Workshop :
Plot No. E - 122,
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MINE SUMP WATER RESULTS

RESULT OF GROUND WATER QUALITY

| Result Summary (Average for the year 2021-22 i.e. Date of Commissioning to March, 2022) | | | | | | |
|--|-------------------------------------|-------------------------|--|--------------------------------|-------------------------------|-------------------------------|
| Sr. No | Test Parameters | Measurement Unit | As per IS : 10500 : 1991 (Drinking Water - Specification) | | Results Sample - 1 | Results Sample - 1 |
| | | | Desirable Requirement | Permissible Requirement | | |
| 1 | pH Value | - | 6.5 to 8.5 | No relaxation | 7.90 | 7.70 |
| 2 | Turbidity NTU | NTU | 5 | 10 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen | 5 | 25 | 0.1 | 0.1 |
| 4 | Odour | - | Unobjection | - | Agreeable | Agreeable |
| 5 | Taste | - | Acceptable | - | Agreeable | Agreeable |
| 6 | Total Dissolved Solids | mg / l | 500 | 2000 | 672 | 724 |
| 7 | Fluoride (as F) | mg / l | 1.0 | 1.5 | 0.090 | 0.95 |
| 8 | Chlorides (as Cl) | mg / l | 250 | 1000 | 22.8 | 24.1 |
| 9 | Total Alkalinity (as | mg / l | 200 | 600 | 232 | 220 |
| 10 | Total Hardness as (| mg / l | 300 | 600 | 260 | 284 |
| 11 | Calcium (as Ca) | mg / l | 75 | 200 | 73.8 | 75.2 |
| 12 | Magnesium (as Mg) | mg / l | 30 | 100 | 18.4 | 23.3 |
| 13 | Sulphate (as SO ₄) | mg / l | 200 | 400 | 17.3 | 19.4 |
| 14 | Nitrates (as NO ₃) | mg / l | 45 | 100 | 2.10 | 2.25 |
| 15 | Total Iron (as Fe) | mg / l | 0.3 | 1.0 | 0.25 | 0.28 |
| 16 | Cyanide | mg / l | 0.05 | No | <0.005 | <0.005 |
| 17 | Copper (as Cu) | mg / l | 0.05 | 1.5 | <0.03 | <0.03 |
| 18 | Manganese (as Mn) | mg / l | 0.1 | 0.3 | 0.014 | 0.014 |
| 19 | Mercury (as Hg) | mg / l | 0.001 | No | <0.0005 | <0.0005 |
| 20 | Cadmium (as Cd) | mg / l | 0.01 | No | <0.001 | <0.001 |
| 21 | Selenium (as Se) | mg / l | 0.01 | No | <0.001 | <0.001 |
| 22 | Arsenic (as As) | mg / l | 0.05 | No | <0.01 | <0.01 |
| 23 | Lead (as Pb) | mg / l | 0.05 | No | <0.001 | <0.001 |
| 24 | Zinc (ss Zn) | mg / l | 5 | 15 | 2.07 | 2.40 |
| 25 | Chromium (as Cr) | mg / l | 0.05 | No | <0.01 | <0.01 |
| 26 | Aluminum as (Al) | mg / l | 0.03 | 0.2 | <0.001 | <0.001 |
| 27 | Boron as (B) | mg / l | 1 | 5 | 0.15 | 0.19 |
| 28 | Mineral Oil | ppm | 0.01 | 0.03 | <0.001 | <0.001 |
| 29 | Anionic Detergents | ppm | 0.2 | 1.0 | <0.001 | <0.001 |
| 30 | Phenolic Compounds | ppm | 0.001 | 0.002 | <0.001 | <0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | - | - | <0.03 | <0.03 |
| 32 | Pesticides | ppb | Absent | 0.1 | Absent | Absent |
| 33 | Residual Chlorine | ppm | Min.0.2 | - | Nil | Nil |
| 34 | Total Coliform | MPN/100 | Absent | 10 | Absent | Absent |

Sample 1: Bore Well near Time Office.

Sample 2: Bore Well near Mine Office.



SARDA ENERGY & MINERALS LTD.

| Result Summary (Average for the year 2022-23 i.e. April 2022 to March, 2023) | | | | | | |
|--|-------------------------------------|------------------|--|-------------------------|--------------------|--------------------|
| Sr. No | Test Parameters | Measurement Unit | As per IS : 10500 : 1991 (Drinking Water - Specification) | | Results Sample - 1 | Results Sample - 1 |
| | | | Desirable Requirement | Permissible Requirement | | |
| 1 | pH Value | - | 6.5 to 8.5 | No Relaxation | 7.95 | 7.81 |
| 2 | Turbidity NTU | NTU | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids | mg / l | 500 | 2000 | 712 | 718 |
| 7 | Fluoride (as F) | mg / l | 1.0 | 1.5 | 0.99 | 0.94 |
| 8 | Chlorides (as Cl) | mg / l | 250 | 1000 | 29.3 | 30.0 |
| 9 | Total Alkalinity (as | mg / l | 200 | 600 | 242 | 235 |
| 10 | Total Hardness as (| mg / l | 300 | 600 | 292 | 296 |
| 11 | Calcium (as Ca) | mg / l | 75 | 200 | 74.2 | 76.6 |
| 12 | Magnesium (as Mg) | mg / l | 30 | 100 | 25.9 | 25.4 |
| 13 | Sulphate (as SO ₄) | mg / l | 200 | 400 | 26.3 | 27.7 |
| 14 | Nitrates (as NO ₃) | mg / l | 45 | 100 | 2.85 | 2.70 |
| 15 | Total Iron (as Fe) | mg / l | 0.3 | 1.0 | 0.25 | 0.27 |
| 16 | Cyanide | mg / l | 0.05 | No | <0.005 | <0.005 |
| 17 | Copper (as Cu) | mg / l | 0.05 | 1.5 | <0.03 | <0.03 |
| 18 | Manganese (as Mn) | mg / l | 0.1 | 0.3 | 0.021 | 0.027 |
| 19 | Mercury (as Hg) | mg / l | 0.001 | No | <0.0005 | <0.0005 |
| 20 | Cadmium (as Cd) | mg / l | 0.01 | No | <0.001 | <0.001 |
| 21 | Selenium (as Se) | mg / l | 0.01 | No | <0.001 | <0.001 |
| 22 | Arsenic (as As) | mg / l | 0.05 | No | <0.01 | <0.01 |
| 23 | Lead (as Pb) | mg / l | 0.05 | No | <0.001 | <0.001 |
| 24 | Zinc (ss Zn) | mg / l | 5 | 15 | 1.47 | 1.47 |
| 25 | Chromium (as Cr) | mg / l | 0.05 | No | <0.01 | <0.01 |
| 26 | Aluminum as (Al) | mg / l | 0.03 | 0.2 | <0.001 | <0.001 |
| 27 | Boron as (B) | mg / l | 1 | 5 | 0.133 | 0.133 |
| 28 | Mineral Oil | ppm | 0.01 | 0.03 | <0.001 | <0.001 |
| 29 | Anionic Detergents | ppm | 0.2 | 1.0 | <0.001 | <0.001 |
| 30 | Phenolic Compounds | ppm | 0.001 | 0.002 | <0.001 | <0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | - | - | <0.03 | <0.03 |
| 32 | Pesticides | ppb | Absent | 0.1 | Absent | Absent |
| 33 | Residual Chlorine | ppm | Min.0.2 | - | Nil | Nil |
| 34 | Total Coliform | MPN/100 | Absent | 10 | Absent | Absent |

Annexures enclosed:

H. O. : B-1003, Enviro House, 10th Floor, Western Edge II, Western Express Highway, Borivli (E), Mumbai - 400 066.
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Page 1 of 2

EAEPL/W/SEML/2022-23/005

Date: 13.04.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 5.04.2022

Analysis Starting Date : 6.04.2022

Quantity received : 2 lit

Analysis Completion Date : 13.04.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.90 | 7.70 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 672 | 724 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.90 | 0.95 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 22.8 | 24.1 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 232 | 220 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 260 | 284 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 73.8 | 75.2 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 18.4 | 23.3 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 17.3 | 19.4 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.10 | 2.25 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.25 | 0.28 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.014 | 0.014 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory

Nagpur Branch :

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Pune Branch:

Flat No. 11,
Tarankit Co. Op. Hsg. Soc. Ltd.,
City S. No. 209, B/1, Sadashiv Peth,
L. B. S. Road, Nr. Dnyanesh Mangal Hall,
Pune - 411 030.
Tel. : 020-2432 4444

Lab :

Row House No. 2, Shalom Garden,
Opp. Kanakia College,
100 Feet Kanakia Road,
Mira Road (East), Thane - 401 107.
Tel. : 022-2811 6442

Workshop :

Plot No. E - 122,
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EAEPL/W/SEML/2022-23/005

Date: 13.04.2022

Issue to

M/s Sarda Energy & Minerals Ltd.
 (1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 5.04.2022

Analysis Starting Date : 6.04.2022

Quantity received : 2 lit

Analysis Completion Date : 13.04.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|-------------------------------------|------------|--------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 2.07 | 2.40 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.15 | 0.19 |
| 28 | Mineral Oil | ppm | IS: 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS: 13428 (Annex K):2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS: 3025 (Part 43):1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS: 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose

For Enviro Analysts & Engineers Pvt. Ltd.


 Authorized Signatory

Nagpur Branch :
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Lab :
 Row House No. 2, Shalom Garden,
 Opp. Karakia College,
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 Tel. : 022-2811 6442

Workshop :
 Plot No. E - 122,
 MIDC Tarapur,
 Boisar,
 Dist. - Thane - 401 506.

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EAEPL/W/SEML/2022-23/021

Date: 8.06.2022

Issue to
M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria, Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

| | | | |
|--------------------------|--------------|--------------------------|------------------------|
| Sample Registration Date | : 31.05.2022 | Analysis Starting Date | : 1.06.2022 |
| Quantity received | : 2 lit | Analysis Completion Date | : 8.06.2022 |
| | | Sampled by | : EAEPL Representative |

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 8.05 | 7.85 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 720 | 748 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.95 | 0.95 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 30.4 | 32.2 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 240 | 232 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 288 | 310 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 75.8 | 77.2 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 23.9 | 28.4 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 21.7 | 24.1 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.20 | 2.45 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.27 | 0.30 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.016 | 0.015 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.


 Authorized Signatory

Nagpur Branch :
 Shiv Kunj, Bungalow No. 65,
 Old Verma Layout, Ambazari,
 Nagpur - 440 010.
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 Telefax : 0712 - 2241 836

Pune Branch:
 Flat No. 11,
 Tarankit Co. Op. Hsg. Soc. Ltd.,
 City S. No. 209, B/1, Sadashiv Peth,
 L. B. S. Road, Nr. Dryanal Mangal Hall,
 Pune - 411 030.
 Tel. : 020-2432 4444

Lab :
 Row House No. 2, Shalom Garden,
 Opp. Kanakia College,
 100 Feet Kanakia Road,
 Mira Road (East), Thane - 401 107.
 Tel. : 022-2811 6442

Workshop :
 Plot No. E - 122,
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 Boisar,
 Dist. - Thane - 401 506.

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EAEPL/W/SEML/2022-23/021

Date: 8.06.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

| | | | |
|--------------------------|--------------|--------------------------|------------------------|
| Sample Registration Date | : 31.05.2022 | Analysis Starting Date | : 1.06.2022 |
| Quantity received | : 2 lit | Analysis Completion Date | : 8.06.2022 |
| | | Sampled by | : EAEPL Representative |

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|-------------------------------------|------------|---------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 2.12 | 2.35 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.18 | 0.22 |
| 28 | Mineral Oil | ppm | IS : 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS : 13428 (Annex K):2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS : 3025 (Part 43):1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS : 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory

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L. B. S. Road, Nr. Dryanal Mangal Hall,
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EAEPL/W/SEML/2022-23/032

Date: 2.07.2022

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 10.06.2022

Analysis Starting Date : 11.06.2022

Quantity received : 2 lit

Analysis Completion Date : 20.06.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 8.15 | 8.0 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 734 | 760 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.98 | 0.96 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 31.3 | 33.8 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 244 | 238 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 302 | 316 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 77.8 | 79.0 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 26.1 | 28.8 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 23.0 | 25.5 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.35 | 2.40 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.283 | 0.291 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.014 | 0.017 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.


 Authorized Signatory

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EAEPL/W/SEML/2022-23/032

Date: 2.07.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

| | | | |
|--------------------------|--------------|--------------------------|------------------------|
| Sample Registration Date | : 10.06.2022 | Analysis Starting Date | : 11.06.2022 |
| Quantity received | : 2 lit | Analysis Completion Date | : 20.06.2022 |
| | | Sampled by | : EAEPL Representative |

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|------------------------------------|------------|---------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.98 | 2.20 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.158 | 0.204 |
| 28 | Mineral Oil | ppm | IS : 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS : 13428 (Annex K):2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS : 3025 (Part 43):1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polynuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS : 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/W/SEML/2022-23/053

Date: 2.08.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 14.07.2022

Analysis Starting Date : 15.07.2022

Quantity received : 2 lit

Analysis Completion Date : 30.07.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.75 | 7.80 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 610 | 632 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.85 | 0.90 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 26.4 | 28.2 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 202 | 214 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 262 | 270 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 68.2 | 70.8 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 22.2 | 22.6 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 17.6 | 18.3 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.55 | 2.60 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.215 | 0.22 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.011 | 0.011 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory

H. O. : B-1003, Enviro House, 10th Floor, Western Edge II, Western Express Highway, Borivali (E), Mumbai - 400 066.
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EAEPL/W/SEML/2022-23/053

Date: 2.08.2022

Issue to

M/s Sarda Energy & Minerals Ltd.
 (1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

| | |
|---------------------------------------|---------------------------------------|
| Sample Registration Date : 14.07.2022 | Analysis Starting Date : 15.07.2022 |
| Quantity received : 2 lit | Analysis Completion Date : 30.07.2022 |
| | Sampled by : EAEPL Representative |

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|-------------------------------------|------------|--------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.55 | 1.72 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.142 | 0.184 |
| 28 | Mineral Oil | ppm | IS: 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS: 13428 (Annex K):2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS: 3025 (Part 43):1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS: 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

For Enviro Analysts & Engineers Pvt. Ltd.


 Authorized Signatory



ENVIRO ANALYSTS & ENGINEERS PVT. LTD.

NABET Accredited & MoEF (Govt. of India) approved

CIN No. : U28900MH1995PTC093129



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EAEPL/W/SEML/2022-23/064

Date: 30.08.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 12.08.2022

Analysis Starting Date : 13.08.2022

Quantity received : 2 lit

Analysis Completion Date : 28.08.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|--------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.50 | 7.55 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 502 | 514 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.72 | 0.75 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 18.3 | 19.6 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 182 | 190 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 188 | 204 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 58.2 | 61.8 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 10.3 | 12.02 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 12.7 | 13.5 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.35 | 2.48 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part 11)-2004 | 0.3 | 1.0 | 0.180 | 0.185 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.010 | 0.010 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/W/SEML/2022-23/064

Date: 30.08.2022

Issue to

M/s Sarda Energy & Minerals Ltd.
 (1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 12.08.2022

Analysis Starting Date : 13.08.2022

Quantity received : 2 lit

Analysis Completion Date : 28.08.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|-------------------------------------|------------|--------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.06 | 1.15 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.118 | 0.126 |
| 28 | Mineral Oil | ppm | IS: 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS: 13428 (Annex K)-2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS: 3025 (Part 43)-1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS: 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.**REMARKS:** Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

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EAEPL/W/SEML/2022-23/073

Date: 29.09.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 8.09.2022

Analysis Starting Date : 9.09.2022

Quantity received : 2 lit

Analysis Completion Date : 22.09.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.65 | 7.72 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 526 | 540 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.76 | 0.77 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 19.1 | 20.3 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 190 | 198 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 196 | 212 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 60.8 | 63.2 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 10.7 | 13.1 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 13.1 | 15.2 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.20 | 2.35 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.184 | 0.191 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | <0.005 | <0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | <0.03 | <0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.010 | 0.011 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | <0.0005 | <0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/W/SEMI/2022-23/073

Date: 29.09.2022

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 8.09.2022

Analysis Starting Date : 9.09.2022

Quantity received : 2 lit

Analysis Completion Date : 22.09.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|-------------------------------------|------------|---------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.14 | 1.120 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.118 | 0.126 |
| 28 | Mineral Oil | ppm | IS : 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS : 13428 (Annex K)-2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS : 3025 (Part 43)-1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS : 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/W/SEML/2022-23/082

Date: 27.10.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 15.10.2022

Analysis Starting Date : 16.10.2022

Quantity received : 2 lit

Analysis Completion Date : 27.10.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.78 | 7.80 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 568 | 604 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.80 | 0.82 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 20.2 | 21.7 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 198 | 206 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 212 | 230 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 62.2 | 68.8 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 13.7 | 14.0 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 13.8 | 17.1 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.25 | 2.50 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.19 | 0.20 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.011 | 0.011 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.



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EAEPL/W/SEML/2022-23/082

Date: 27.10.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G.)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry Gate W2) Bore well Near Work Shop

Sample Registration Date : 15.10.2022

Analysis Starting Date : 16.10.2022

Quantity received : 2 lit

Analysis Completion Date : 27.10.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|------------------------------------|------------|---------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.18 | 1.15 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.118 | 0.126 |
| 28 | Mineral Oil | ppm | IS : 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS : 13428 (Annex K)-2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS : 3025 (Part 43)-1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polynuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS : 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

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 Tel. : 022-2811 8442

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EAEPL/W/SEML/2022-23/093

Date: 22.11.2022

Issue to

M/s Sarda Energy & Minerals Ltd.**(1.2MTPA Coal Mines)****Vill: Karwahi, Khamaria, Bajarmuda & Others****Tehsil: Tamnar, District: Raigarh (C.G)****Your Ref.: As per Work Order****Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop**

Sample Registration Date : 12.11.2022

Analysis Starting Date : 13.11.2022

Quantity received : 2 lit

Analysis Completion Date : 21.11.2022

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.83 | 7.87 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 582 | 626 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.83 | 0.87 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 21.5 | 22.3 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 204 | 215 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 226 | 242 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 65.8 | 70.2 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 14.9 | 16.1 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 17.2 | 18.3 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.38 | 2.45 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.21 | 0.23 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.013 | 0.012 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.**Authorized Signatory**



ENVIRO ANALYSTS & ENGINEERS PVT. LTD.

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CIN No. : U28900MH1995PTC093129



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EAEPL/W/SEML/2022-23/093

Date: 22.11.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

| | | | |
|--------------------------|--------------|--------------------------|------------------------|
| Sample Registration Date | : 12.11.2022 | Analysis Starting Date | : 13.11.2022 |
| Quantity received | : 2 lit | Analysis Completion Date | : 21.11.2022 |
| | | Sampled by | : EAEPL Representative |

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|------------------------------------|------------|---------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.23 | 1.19 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.122 | 0.131 |
| 28 | Mineral Oil | ppm | IS : 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS : 13428 (Annex K):2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS : 3025 (Part 43):1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polynuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS : 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/W/SEML/2022-23/107

Date: 29.12.2022

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

| | | | |
|--------------------------|--------------|--------------------------|------------------------|
| Sample Registration Date | : 11.12.2022 | Analysis Starting Date | : 12.12.2022 |
| Quantity received | : 2 lit | Analysis Completion Date | : 20.12.2022 |
| | | Sampled by | : EAEPL Representative |

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.86 | 7.90 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 614 | 640 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.87 | 0.89 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 23.3 | 24.1 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 210 | 218 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 248 | 256 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 68.2 | 72.0 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 18.8 | 18.5 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 19.2 | 20.5 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.43 | 2.60 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.24 | 0.25 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.015 | 0.014 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.



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EAEPL/W/SEML/2022-23/121

Date: 30.01.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars : W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 21.01.2023

Analysis Starting Date : 22.01.2023

Quantity received : 2 lit

Analysis Completion Date : 28.01.2023

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.94 | 8.02 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 642 | 666 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.92 | 0.95 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 25.1 | 27.3 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 230 | 238 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 258 | 270 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 71.5 | 74.8 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 19.3 | 20.2 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 21.4 | 23.0 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.62 | 2.75 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.25 | 0.27 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.017 | 0.020 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/W/SEML/2022-23/121

Date: 30.01.2023

Issue to

M/s Sarda Energy & Minerals Ltd.
 (1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars : W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 21.01.2023

Analysis Starting Date : 22.01.2023

Quantity received : 2 lit

Analysis Completion Date : 28.01.2023

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|-------------------------------------|------------|---------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.34 | 1.26 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.130 | 0.133 |
| 28 | Mineral Oil | ppm | IS : 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS : 13428 (Annex K)-2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS : 3025 (Part 43)-1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polyneuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS : 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/W/SEML/2022-23/128

Date: 27.02.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars : W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 9.02.2023

Analysis Starting Date : 10.02.2023

Quantity received : 2 lit

Analysis Completion Date : 22.02.2023

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 8.00 | 7.76 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 690 | 702 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.97 | 0.91 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 26.4 | 29.1 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 236 | 224 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 274 | 278 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 73.2 | 74.1 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 22.1 | 22.5 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 24.7 | 25.1 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.72 | 2.55 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.23 | 0.25 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.021 | 0.023 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

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EAEPL/W/SEML/2022-23/128

Date: 27.02.2023

Issue to

M/s Sarda Energy & Minerals Ltd.
 (1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars : W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 9.02.2023

Analysis Starting Date : 10.02.2023

Quantity received : 2 lit

Analysis Completion Date : 22.02.2023

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|------------------------------------|------------|--------------------------|--|-------------------|---------|---------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 20 | Cadmium (as Cd) | mg / l | IS : 3025 (Part II)-2004 | 0.003 | No relaxation | < 0.001 | < 0.001 |
| 21 | Selenium (as Se) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | No relaxation | < 0.001 | < 0.001 |
| 22 | Arsenic (as As) | mg / l | IS : 3025 (Part II)-2004 | 0.01 | 0.05 | < 0.01 | < 0.01 |
| 23 | Lead (as Pb) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 24 | Zinc (as Zn) | mg / l | IS : 3025 (Part II)-2004 | 5 | 15 | 1.30 | 1.32 |
| 25 | Total Chromium (as Cr) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | No relaxation | < 0.01 | < 0.01 |
| 26 | Aluminum as (Al) | mg / l | IS : 3025 (Part II)-2004 | 0.03 | 0.2 | < 0.001 | < 0.001 |
| 27 | Boron as (B) | mg / l | IS : 3025 (Part II)-2004 | 1 | 5 | 0.121 | 0.124 |
| 28 | Mineral Oil | ppm | IS: 3025 (Part 39)-1991 | 0.05 | No relaxation | < 0.001 | < 0.001 |
| 29 | Anionic Detergents | ppm | IS: 13428 (Annex K):2005 | 0.2 | 1.0 | < 0.001 | < 0.001 |
| 30 | Phenolic Compounds | ppm | IS: 3025 (Part 43):1992 | 0.001 | 0.002 | < 0.001 | < 0.001 |
| 31 | Polynuclear aromatic comp (as PAH) | ppb | USEPA : 550 | 0.0001 | No relaxation | < 0.03 | < 0.03 |
| 32 | Residual Chlorine | ppm | IS: 3025 (Part 26)-1986 | Min.0.2 | 1.0 | Nil | Nil |
| 33 | E. coli | CFU/100ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |
| 34 | Total Coliform | MPN/100 ml | IS : 1622-1981 | Absent | Absent | Absent | Absent |

Note: 1. Results relate to tested sample only. 2. Test report should not be reproduced partially.

REMARKS: Based upon request of the party, sample was tested for above mentioned parameters only. As per IS: 10500:2012, Water quality are suitable for drinking purpose in absence of alternative source.

For Enviro Analysts & Engineers Pvt. Ltd.


 Authorized Signatory

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EAEPL/W/SEML/2022-23/151

Date: 29.03.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.2MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tamnar, District: Raigarh (C.G)

Your Ref.: As per Work Order

Sample Particulars: W1) Bore well near Main Entry gate W2) Bore well Near Work Shop

Sample Registration Date : 24.03.2023

Analysis Starting Date : 25.03.2023

Quantity received : 2 lit

Analysis Completion Date : 29.03.2023

Sampled by : EAEPL Representative

TEST RESULTS

| Sr. No. | Test Parameters | Unit | Method | As per IS : 10500 : 2012 (Drinking Water - Specification) | | Results | |
|---------|--|-------------|---------------------------|--|-------------------|-----------|-----------|
| | | | | Acceptable Limit | Permissible Limit | W1 | W2 |
| 1 | pH Value | - | IS : 3025 (Part 11)-1983 | 6.5 to 8.5 | No relaxation | 7.95 | 7.81 |
| 2 | Turbidity NTU | NTU | IS : 3025 (Part 10)-1984 | 1 | 5 | 0.1 | 0.1 |
| 3 | Apparent Colour | Hazen units | IS : 3025 (Part 4)-1983 | 5 | 15 | 0.1 | 0.1 |
| 4 | Odour | - | IS : 3025 (Part 5)-1983 | Agreeable | Agreeable | Agreeable | Agreeable |
| 5 | Taste | - | IS : 3025 (Part 8)-1984 | Agreeable | Agreeable | Agreeable | Agreeable |
| 6 | Total Dissolved Solids (TDS) | mg / l | IS : 3025 (Part 16)-1984 | 500 | 2000 | 712 | 718 |
| 7 | Fluoride (as F) | mg / l | IS : 3025 1964 | 1.0 | 1.5 | 0.99 | 0.94 |
| 8 | Chlorides (as Cl) | mg / l | IS : 3025 (Part 32)-1988 | 250 | 1000 | 29.3 | 30.0 |
| 9 | Total Alkalinity (as CaCO ₃) | mg / l | IS : 3025 (Part 23)-1986 | 200 | 600 | 242 | 235 |
| 10 | Total Hardness as (CaCO ₃) | mg / l | IS : 3025 (Part 21)-1983 | 200 | 600 | 292 | 296 |
| 11 | Calcium (as Ca) | mg / l | IS : 3025 (Part 40)-1991 | 75 | 200 | 74.2 | 76.6 |
| 12 | Magnesium (as Mg) | mg / l | IS : 3025 (Part 46)-1994 | 30 | 100 | 25.9 | 25.4 |
| 13 | Sulphate (as SO ₄) | mg / l | IS : 3025 (Part 24)-1986 | 200 | 400 | 26.3 | 27.7 |
| 14 | Nitrates (as NO ₃) | mg / l | IS : 3025 (Part 34)-1988 | 45 | 100 | 2.85 | 2.70 |
| 15 | Total Iron (as Fe) | mg / l | IS : 3025 (Part -II)-2004 | 0.3 | 1.0 | 0.25 | 0.27 |
| 16 | Cyanide | mg / l | IS 3025 : 1986 (Part 27) | 0.05 | No relaxation | < 0.005 | < 0.005 |
| 17 | Copper (as Cu) | mg / l | IS : 3025 (Part II)-2004 | 0.05 | 1.5 | < 0.03 | < 0.03 |
| 18 | Manganese (as Mn) | mg / l | IS : 3025 (Part II)-2004 | 0.1 | 0.3 | 0.021 | 0.027 |
| 19 | Mercury (as Hg) | mg / l | IS : 3025 (Part II)-2004 | 0.001 | No relaxation | < 0.0005 | < 0.0005 |

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory



SARDA ENERGY & MINERALS LTD.

RESULT OF WATER LEVEL MONITORING

| Result Summary (Average for the year 2021-22 i.e. Date of Commissioning to March, 2022) | | |
|--|-------------------------------------|-------------------------------------|
| Sr. No. | Location | Depth to water level (m bgl) |
| 1. | Bore Well Near Main Gate Entry gate | 20.70 |
| 2. | Bore Well Near Work Shop | 20.10 |

| Result Summary (Average for the year 2022-23 i.e. April 2022 to March, 2023) | | |
|---|-------------------------------------|-------------------------------------|
| Sr. No. | Location | Depth to water level (m bgl) |
| 1. | Bore Well Near Main Gate Entry gate | 14.50 |
| 2. | Bore Well Near Work Shop | 13.70 |

Annexures enclosed:



H. O. : B-1003, Enviro House, 10th Floor, Western Edge II, Western Express Highway, Borivali (E), Mumbai - 400 066.
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Ground Water level monitoring for April-2022

| Sr. No. | Location | Depth to water level (m bgl) | Date of monitoring |
|---------|----------------------|------------------------------|--------------------|
| 1. | Near Main Entry gate | 20.70 m | 5.04.2022 |
| 2. | Near Work Shop | 20.10 m | 5.04.2022 |

Forwarded with compliments to **M/s SARDA ENERGY & MINERALS LIMITED**
1.2MTPA Coal Mines)
Vill: Karwahi, Khamaria, Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

For Enviro Analysts & Engineers Pvt. Ltd.


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Ground Water level monitoring for Aug.-2022

| Sr. No. | Location | Depth to water level (m bgl) | Date of monitoring |
|---------|----------------------|------------------------------|--------------------|
| 1. | Near Main Entry gate | 10.50 m | 12.08.2022 |
| 2. | Near Work Shop | 9.65 m | 12.08.2022 |

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For Enviro Analysts & Engineers Pvt. Ltd.

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Ground Water level monitoring for Nov.-2022

| Sr. No. | Location | Depth to water level (m bgl) | Date of monitoring |
|---------|----------------------|------------------------------|--------------------|
| 1. | Near Main Entry gate | 11.20 m | 12.11.2022 |
| 2. | Near Work Shop | 10.15 m | 12.11.2022 |

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Ground Water level monitoring for Jan.-2023

| Sr. No. | Location | Depth to water level (m bgl) | Date of monitoring |
|---------|----------------------|------------------------------|--------------------|
| 1. | Near Main Entry gate | 14.50 m | 21.01.2023 |
| 2. | Near Work Shop | 13.70 m | 21.01.2023 |

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SARDA ENERGY & MINERALS LTD.

PART – D

| | HAZARDOUS WASTE | During financial year 2021 –22 | During financial year 2022 –23 |
|---|-----------------------------------|-----------------------------------|-----------------------------------|
| | | QUANTITY (Kg) | QUANTITY (Kg) |
| 1 | From process | NIL | 10.02 T |
| 2 | From pollution control facilities | NA | NA |

PART – E

SOLID WASTE

| Generation step | | Quantity | |
|--|-------------------|--------------------------------------|--------------------------------------|
| | | During financial year 2021 –22 | During financial year 2022 –23 |
| 1. From Process | Top soil | 115000 CUM | 198500 CUM |
| | Sandstone & Shale | 1165719 CUM | 4632996 CUM |
| 2. From pollution control facilities | | - | - |
| 3. Quantity recycled or reutilised within the unit | | NA | NA |

PART – F

None of the waste generation is hazardous from toxicity point of view. Only spent oil/ used oil, and Cotton rags is being generated as Hazardous waste. The solid waste generated is overburden (Topsoil, Sandstone & Shale) from mining operation. Topsoil is being stacked separately to be topped on the reclaimed area and plantation will be done.

Sandstone and Shale etc. is being stacked separately. This overburden dump will be back filled. OB dump height is proposed to be a maximum 60 Meters, terraced and planted when dump is not in use. The overall slope angle is proposed to be 28 degrees. After 5 years back filling in the de-coaled area and plantation will be done.



PART – G

The following steps have been taken for pollution control:

1. We have installed fixed sprinklers on haul road, rain guns and wind breakers around the coal stock yard for controlling fugitive emissions.
2. We have installed ETP with EQMS, Oil/grease separator, and three settling tanks with flow meter and PTZ camera.
3. We have constructed settling tanks, sumps, siltation ponds and soaks pits which will conserve and augment ground water levels.
4. We have constructed catch drains, garland drains, siltation ponds and retaining walls. Water collected in sumps/dumps has been used for greenbelt development and dust suppression as per the imposed condition.
5. Desilting of garland drains made in the mine with check dams for stormwater management, to reduce the erosion of the topsoil and stacks and to control solid particulates from going to nearby Nalla, had been pre-monsoon and two times during monsoon.
6. To reduce vibration, Surface miner and control blasting techniques are being used.
7. The OB dump is being stacked at earmarked dump site and will not be active for a long period.
8. Proper terracing of OB dump is being carried out and over the slop of the dump not exceeds 28 degree.
9. Catch drains & siltation ponds are constructed to arrest silt and sediment flows from soil, Over Burden dumps.
10. The total no. of sapling planted in our Coal mine cumulates to be 17,470 by the end of March 2023. In 2023-24, we have planted additional 18,000 more saplings till date.
11. Transportation of coal from the mine is being done after covering the coal by tarpaulin in the trucks.
12. Environmental Monitoring cell has been formed.
13. Oil trap & settling tank has been constructed.

PART – H

1. More frequent sprinkling and water spraying is proposed for environmental protection in the Open Cast Coal Mine.
2. The plantation work is also proposed in the coming years to improve the green belt thickness, for this purpose approximately 11,500 Nos. of trees will be planted in the year 2023–24.
3. Desilting of garland drains and check dams will continue before monsoon next year.
4. Proposal for Environmental Monitoring Lab.

| Plantation Details | | |
|--------------------|----------------------------------|---------------------------------|
| Financial year | Total No of Plantation Completed | Total No of Plantation Proposed |
| 2021 – 22 | Nil | - |
| 2022 – 23 | 18,000 | 11,250 |
| 2023 – 24 | - | 30,000 |



SARDA ENERGY & MINERALS LTD.

PART – I

EXPENDITURE AGAINST POLLUTION CONTROL AND ENVIRONMENTAL MANAGEMENT IN THE YEAR 2022-23 FOR BOTH COAL MINE AND COAL WASHERY.

| S.N | Measure Taken | Expenditure (in Rs.) Year 2021-2022 | Expenditure (in Rs.) Year 2022-2023 | REMARKS |
|--------------|--|---|---|---------------|
| 1 | Garland Drains and Check Dams (Cleaning & Maintenance) | NIL | 35,00,000 | |
| 2 | Construction of stone retaining wall | NIL | 8,09,965 | |
| 3 | Laying of RR Masonary drain | NIL | 6,39,942 | |
| 4 | Construction of Emergency settling Pound & Cleaning work | NIL | 1,20,00,000 | 6000 Cum |
| 5 | Construction of Mini settling Pound | NIL | 65,000 | |
| 6 | Cleaning Work (housekeeping) | | | |
| 7 | ETP | NIL | 5,00,000 | |
| 8 | Rain Water Harvesting | NIL | NIL | |
| 9 | Plantation work | NIL | 3,50,000 | 18000 Trees |
| 10 | Occupational Health & Safety and Labour Welfare | | | |
| a | IME/PME | NIL | 5,00,000 | |
| b | Rest Shelter | NIL | 2,00,000 | |
| c | First aid room | NIL | 2,00,000 | |
| d | Fire fighting arrangement | NIL | 45,00,000 | |
| e | Ambulance | NIL | 15,00,000 | |
| f | Vocational Training Centre | NIL | 3,00,000 | |
| g | PPEs | NIL | 1,00,000 | |
| h | Canteen Facilities with compost | NIL | 40,00,000 | |
| 11 | Environmental monitoring | | | |
| a. | AAQMS | NIL | 50,00,000 | |
| b | Portable Monitoring Equipment | NIL | 10,00,000 | 2 Nos (PDS) |
| c | Pizo Well and diital pizometer | NIL | 15,00,000 | 2 Nos. |
| d | Hiring agency for Monitoring | NIL | 5,00,000 | |
| 13 | Consent Renewal fee | NIL | | |
| 14 | Water Spraying & Dust Suppression | | | |
| a | Fixed Sprinkler System | NIL | 2,49,000 | |
| b | Rain Guns System | NIL | 6,00,000 | |
| c | Water Tanker | NIL | 25,00,000 | |
| d | Wind Breakers | NIL | 67,00,000 | |
| 15 | Energy Consumption in Pollution Control Equipments | NIL | 4,58,696 | AAQMS and ETP |
| Total | | 3,54,05,857 | 4,76,72,603 | |