

ofc

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SEML/ENV/2024-25/8906
Date: 27.09.2024

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

Sub: Submission of Environmental Statement for the year 2023-24 for our Gare Palma IV/7 Opencast Coal Mine located at Village – Karwahi, Khamaria, Saraitola, Bajarmuda & Dholnara, Tehsil – Tamnar, District –Raigarh, Chhattisgarh of M/s Sarda Energy & Minerals Ltd.

Dear Sir,

We are enclosing herewith Environmental Statement in **Form- V** for the FY 2023-24 for our our Gare Palma IV/7 Opencast Coal Mine located at Village – Karwahi, Khamaria, Saraitola, Bajarmuda & Dholnara, Tehsil – Tamnar, District –Raigarh, Chhattisgarh, as per the Notification of Ministry of Environment & Forests (MoEF), Govt. of India, for your kind perusal.

Kindly acknowledge the receipt of the same.

Thanking you,

Yours faithfully,

For Sarda Energy & Minerals Limited,

P.S. Dutta Gupta
Authorized Signatory



Cc: The Regional Officer, CECB, T.V. Tower Road, Near Paryavaran Park, Raigarh (C.G.)

ENVIRONMENTAL STATEMENT

2023-2024

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

OF



***KARWAHI (GARE PALMA IV/7) OPENCAST
COAL MINE***

at



**VILLAGE –
KARWAHI, KHAMARIA, SARAITOLA, BAJARMUDA &
DHOLNARA
TEHSIL - TAMNAR
DISTRICT – RAIGARH, CHATTISGARH**

FORM – V

ANNUAL ENVIRONMENTAL STATEMENT
(Rule 14 of The Environment Protection 1986)

**Environmental Statement for the financial year ending with
31st March 2024**

PART – A

**NAME & ADDRESS OF
INDUSTRY**

SARDA ENERGY & MINERALS LIMITED
GARE PALMA IV/7, COAL MINE, ,
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**

01.09.2023
Mine was Re- Commissioned on
14.12.2021

**PART – B****PRODUCT DETAILS**

NAME OF PRODUCT	LICENSE CAPACITY (TPA)	ACTUAL PRODUCTION MT	
		2022-2023	2023-2024
Coal	12,00,000.00	11,99,998 Tonnes	14,39,646.26 Tonnes

RAW MATERIAL CONSUMPTION

The main raw material for Coal Mining are explosives, the consumption of the same in the year 2022-2023 & 2023-2024 is shown below.

Sr. No.	NAME OF MATERIAL	UoM	Amount Consumed	
			During the previous financial year 2022 – 2023	During current financial year 2023– 2024
1.	Ordinary/ Electric Detonator a) Non-Electric Detonator b) Electric Detonator	Mtr No.	412541 Nos 1339 Nos	102413.00 2619.00
2.	Safety Fuse	Mtr.	81340	0.00
3.	Power Gel	Kg	947350	1170540.00
4.	If any material (Booster)	Kg	3759	6309.10

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 2022-23 and 2023-24 is as follows:

S. N.	Fuel Oil	2022 – 2023	2023 – 2024
1.	H. S. D.	30900 Litres	38705 Litres



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 2022-23 and 2023-24 is shown below.

S. No.	PURPOSE	QUANTITY	
		2022 – 23 (Apr 22 – Mar 23) IN CUM	2023 – 2024 (Apr 23 – Mar 24) IN CUM
	(FROM BOREWELLS)		
1	DOMESTIC	4500	4628.4
	FROM MINE DEWATERING		
	INDUSTRIAL WATER		
1	DUST SUPPRESSION, SPRINKLING etc.	108000	120000
2	PLANTATION	2230	6000
3	WET DRILLING	3600	4000
4	WORKSHOP/WASHING	1200	1500
5	FIRE FIGHTING	3600	3800
6	WASHERY	109500	111000
	TOTAL	232630	250928



PART – C

AMBIENT AIR QUALITY MONITORING RESULTS

Ambient Air Quality Monitoring Result of the Month of March 2024					
Location	PM 10 ($\mu\text{g}/\text{m}^3$)	PM2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	No₂ ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Near Weigh Bridge (Core Zone)	88.1	44.0	11.7	39.5	0.566
Pata Village (Buffer Zone)	83.3	42.1	7.2	26.2	0.182
Dholnara Village (Buffer Zone)	81.7	41.0	7.5	27.7	0.244
Milupara Village (Buffer Zone)	85.2	43.2	7.8	29.0	0.270

Ambient Air Quality Monitoring Result of the Month of April 2023					
Location	PM 10 ($\mu\text{g}/\text{m}^3$)	PM2.5 ($\mu\text{g}/\text{m}^3$)	SO₂ ($\mu\text{g}/\text{m}^3$)	No₂ ($\mu\text{g}/\text{m}^3$)	CO (mg/m^3)
Near Weigh Bridge (Core Zone)	91.3	46.4	13.7	37.7	0.630
Pata Village (Buffer Zone)	83.2	42.6	8.2	23.7	0.164
Dholnara Village (Buffer Zone)	86.0	43.3	8.5	25.1	0.210
Milupara Village (Buffer Zone)	85.1	43.1	8.3	24.8	0.184

***Month wise Ambient Air Quality Reports for the period of April 2023 to March 2024 is 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/2023-24/011

Date: 29.04.2023

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

Date Of sampling : Duration of Sampling : 24hrly

Date of sampling : 18.04.2023

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	Hg ng/m ³	As ng/m ³	Ni ng/m ³	Cd ng/m ³	Cr ng/m ³
Core Zone											
1.	Near Weigh Bridge	91.3	46.4	13.7	37.7	0.630	< 0.1	< 1	< 0.1	< 0.1	< 0.1
Buffer Zone											
2.	Pata Village	83.2	42.6	8.2	23.7	0.164	< 0.1	< 1	< 0.1	< 0.1	< 0.1
3.	Dholnara Village	86.0	43.3	8.5	25.1	0.210	< 0.1	< 1	< 0.1	< 0.1	< 0.1
4.	Milupara Village	85.1	43.1	8.3	24.8	0.184	< 0.1	< 1	< 0.1	< 0.1	< 0.1
CPCB Standards											
Industrial, Residential, Rural and other Area		100	60	80	80	2	-	6 (annual)	20 (annual)	-	-

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Agpur Branch :
Siv Kunj, Bungalow No. 85,
D. Verma Layout, Ambazari,
Agpur - 440 010.
Tel. : 0712 - 2241 835,
Fax : 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

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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Dist. - Thane - 401 506.





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EAEPL/AA/SEML/2023-24/024

Date: 1.06.2023

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	12.05.2023	90.3	45.2	9.2	28.4	0.760
Buffer Zone							
2.	Pata Village	12.05.2023	81.3	41.6	7.5	22.7	0.168
3.	Dholnara Village	12.05.2023	84.8	44.3	7.9	25.9	0.182
4.	Milupara Village	12.05.2023	84.0	44.1	8.3	27.2	0.174
CPCB Standards							
Industrial, Residential, Rural and other Area			100	60	80	80	2

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

Nagpur Branch :
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Nagpur - 440 010
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Tarapit Co. Op. Inc. Soc. Ltd.
C/O S. No. 209 B7, Sadashiv Peth,
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EAEPL/AA/SEML/2023-24/038

Date: 28.06.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	7.06.2023	93.8	46.4	9.8	30.7	0.832
Buffer Zone							
2.	Pata Village	7.06.2023	83.7	42.3	7.8	24.6	0.194
3.	Dholnara Village	7.06.2023	88.4	45.0	8.5	27.3	0.216
4.	Milupara Village	7.06.2023	86.6	44.6	9.1	29.5	0.208
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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EAEPL/AA/SEML/2023-24/048

Date: 28.07.2023

Issued to : **M/s Sarda Energy & Minerals Ltd.**
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : **Ambient Air Quality**

Date of Sampling : **13.07.2023** Duration of Sampling : **24 hrs**

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	Hg ng/m ³	As µg/m ³	Ni µg/m ³	Cd µg/m ³	Cr µg/m ³
Core Zone											
1.	Near Weigh Bridge	80.3	42.0	9.5	27.7	0.670	<1	<0.1	<0.1	<0.1	<0.1
Buffer Zone											
2.	Pata Village	71.7	35.8	6.1	24.6	0.172	<1	<0.1	<0.1	<0.1	<0.1
3.	Dholnara Village	76.1	38.2	6.9	27.3	0.188	<1	<0.1	<0.1	<0.1	<0.1
4.	Milupara Village	78.4	40.1	7.2	29.5	0.192	<1	<0.1	<0.1	<0.1	<0.1
CPCB Standards											
Industrial, Residential, Rural and other Area		100	60	80	80	2	-	6 Annual	20 Annual	-	-

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory



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EAEPL/AA/SEML/2023-24/056

Date: 26.08.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 9.08.2023 Duration of Sampling : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Core Zone						
1.	Near Weigh Bridge	83.7	42.8	10.3	30.5	0.714
Buffer Zone						
2.	Pata Village	78.2	39.4	6.8	26.3	0.194
3.	Dholnara Village	80.4	40.0	7.1	28.5	0.216
4.	Milupara Village	82.2	41.7	7.5	29.7	0.228
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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EAEPL/AA/SEML/2023-24/071

Date: 21.09.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
 (1.44MTPA Coal Mines)
 Vill: Karwahi, Khamaria Bajarmuda & Others
 Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 14.09.2023 **Duration of Sampling** : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Core Zone						
1.	Near Weigh Bridge	81.2	40.7	10.6	28.4	0.632
Buffer Zone						
2.	Pata Village	76.1	38.0	6.5	22.5	0.173
3.	Dholnara Village	78.3	39.5	6.8	23.1	0.190
4.	Milupara Village	80.7	40.0	7.2	24.7	0.212
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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EAEPL/AA/SEML/2023-24/078

Date: 25.10.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 11.10.2023 Duration of Sampling : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Core Zone						
1.	Near Weigh Bridge	84.6	42.2	11.3	30.7	0.654
Buffer Zone						
2.	Pata Village	78.0	39.5	6.7	23.1	0.180
3.	Dholnara Village	80.5	40.2	7.0	23.6	0.208
4.	Milupara Village	82.3	41.5	6.9	21.9	0.178
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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EAEPL/AA/SEML/2023-24/108

Date: 30.11.2023

Issued to : M/s Sarda Energy & Minerals Ltd.
 (1.44MTPA Coal Mines)
 Vill: Karwahi, Khamaria Bajarmuda & Others
 Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 8.11.2023 Duration of Sampling : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Core Zone						
1.	Near Weigh Bridge	82.6	41.3	10.8	28.8	0.630
Buffer Zone						
2.	Pata Village	75.2	37.7	6.5	20.4	0.168
3.	Dholnara Village	78.1	39.0	6.8	22.2	0.183
4.	Milupara Village	80.0	39.7	7.1	24.6	0.214
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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EAEPL/AA/SEML/2023-24/127

Date: 4.01.2024

Issued to : M/s Sarda Energy & Minerals Ltd.
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamaria Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 20.12.2023 Duration of Sampling : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³	Hg ng/m ³	As ng/m ³	Ni ng/m ³	Cd ng/m ³	Cr ng/m ³
Core Zone											
1.	Near Weigh Bridge	85.7	41.3	10.3	30.2	0.574	< 0.1	0.42	0.75	0.1	< 0.1
Buffer Zone											
2.	Pata Village	75.6	38.2	6.8	21.2	0.172	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
3.	Dholnara Village	76.8	38.8	7.3	22.7	0.190	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
4.	Milupara Village	81.4	40.3	7.6	23.5	0.230	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
CPCB Standards											
Industrial, Residential, Rural and other Area		100	60	80	80	2	-	6 Annual	20 Annual		

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,
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Tel. : 022-2811 8442

Workshop :
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Boisar,
Dist. - Thane - 401 506.



EAEPL/AA/SEML/2023-24/140

Date: 30.01.2024

Issued to : M/s Sarda Energy & Minerals Ltd.
 (1.44MTPA Coal Mines)
 Vill: Karwahi, Khamaria Bajarmuda & Others
 Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 24.01.2024 **Duration of Sampling** : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Core Zone						
1.	Near Weigh Bridge	82.7	40.6	10.6	31.4	0.512
Buffer Zone						
2.	Pata Village	78.8	39.3	7.1	23.2	0.166
3.	Dholnara Village	77.5	39.0	7.5	24.0	0.210
4.	Milupara Village	80.6	40.1	7.3	26.3	0.242
CPCB Standards						
Industrial, Residential, Rural and other Area		100	60	80	80	2

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory

EAEPL/AA/SEML/2023-24/149

Date: 29.02.2024

Issued to : M/s Sarda Energy & Minerals Ltd.
 (1.44MTPA Coal Mines)
 Vill: Karwahi, Khamaria Bajarmuda & Others
 Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 14.02.2024 **Duration of Sampling** : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Core Zone						
1.	Near Weigh Bridge	84.0	42.6	11.2	37.3	0.548
Buffer Zone						
2.	Pata Village	80.2	41.1	7.6	24.1	0.175
3.	Dholnara Village	78.4	40.5	7.8	26.4	0.264
4.	Milupara Village	82.7	41.8	7.7	27.2	0.258
CPCB Standards						
Industrial, Residential, Rural and other Area		100	60	80	80	2

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory

EAEPL/AA/SEML/2023-24/171

Date: 30.03.2024

Issued to : M/s Sarda Energy & Minerals Ltd.
 (1.44MTPA Coal Mines)
 Vill: Karwahi, Khamaria Bajarmuda & Others
 Tehsil: Tamnar, District: Raigarh (C.G)

Sample Particulars : Ambient Air Quality

Date of Sampling : 20.03.2024 **Duration of Sampling** : 24 hrs

TEST REPORT

Sr. No.	LOCATION	PM 10 µg/m ³	PM 2.5 µg/m ³	SO ₂ µg/m ³	NO ₂ µg/m ³	CO mg/m ³
Core Zone						
1.	Near Weigh Bridge	88.1	44.0	11.7	39.5	0.566
Buffer Zone						
2.	Pata Village	83.3	42.1	7.2	26.2	0.182
3.	Dholnara Village	81.7	41.0	7.5	27.7	0.244
4.	Milupara Village	85.2	43.2	7.8	29.0	0.270
CPCB Standards						
Industrial, Residential, Rural and other Area		100	60	80	80	2

For Enviro Analysts & Engineers Pvt. Ltd.


 Authorized Signatory



Mines Sump Water

Mine Sump Monitoring Report for the month of March 2024			
S.No	Test Parameters	Measurement Unit	Result
1	PH Value at 25 ^o C	-	7.82
2	TSS	mg/l	24
3	Total Dissolved Solids (TDS)	mg/l	672
4	Electrical Conductivity	μS/cm	1086
5	Salinity	ppt	624
6	COD	mg/l	62.8
7	BOD at 27 ^o C for 3 days	mg/l	15.9
8	ORP	mV	884
9	Oil and Grease	mg/l	<4.0

Mine Sump Monitoring Report for the month of April 2023			
S.No	Test Parameters	Measurement Unit	Result
1	PH Value at 25 ^o C	-	7.94 at 25 ^o C
2	TSS	mg/l	21
3	Total Dissolved Solids (TDS)	mg/l	792
4	Electrical Conductivity	μS/cm	1280
5	Salinity	ppt	604
6	COD	mg/l	49.3
7	BOD at 27 ^o C for 3 days	mg/l	5.7
8	ORP	mV	892
9	Oil and Grease	mg/l	<4

***Month wise Mine Sump Monitoring Reports for the period of April 2023 to March 2024 is enclosed.**



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EAEPL/WW/SEML/2023-24/011

Date: 29.04.2023

ISSUED TO:

**M/s. Sarda Energy & Minerals Ltd.,
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)**

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 21.04.2023	Analysis Starting Date	: 22.04.2023
Quantity received	: 1 lit	Analysis Completion Date	: 29.04.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.94 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) 1984	21
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	792
4	Electrical Conductivity	µS/cm	-	1280
5	Salinity	ppt	-	604
6	COD	mg / l	IS : 2488 (Part 5) -1976	49.3
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44)-1993	5.7
8	ORP	mV	-	892
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/WW/SEML/2023-24/024

Date: 1.06.2023

ISSUED TO:

**M/s. Sarda Energy & Minerals Ltd.,
(1.2MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)**

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 13.05.2023	Analysis Starting Date	: 14.05.2023
Quantity received	: 1 lit	Analysis Completion Date	: 22.05.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.85 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) 1984	42
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	760
4	Electrical Conductivity	µS/cm	-	1222
5	Salinity	ppt	-	602
6	COD	mg / l	IS : 2488 (Part 5) -1976	136.6
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	16.8
8	ORP	mV	-	858
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	5.2

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/WW/SEML/2023-24/038

Date: 28.06.2023

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 10.06.2023	Analysis Starting Date	: 11.06.2023
Quantity received	: 2 lit	Analysis Completion Date	: 24.06.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.92 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) 1984	38
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	784
4	Electrical Conductivity	µS/cm	-	1274
5	Salinity	ppt	-	628
6	COD	mg / l	IS : 2488 (Part 5) -1976	130.3
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	16.2
8	ORP	mV	-	870
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	4.5

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/WW/SEML/2023-24/048

Date: 28.07.2023

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 14.07.2023	Analysis Starting Date	: 15.07.2023
Quantity received	: 2 lit	Analysis Completion Date	: 25.07.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.85 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) 1984	42
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	734
4	Electrical Conductivity	µS/cm	-	1208
5	Salinity	ppt	-	612
6	COD	mg / l	IS : 2488 (Part 5) -1976	136.6
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	17.8
8	ORP	mV	-	882
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/WW/SEML/2023-24/056

Date: 26.08.2023

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 12.08.2023	Analysis Starting Date	: 13.08.2023
Quantity received	: 2 lit	Analysis Completion Date	: 14.08.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.72 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17)-1984	36
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	680
4	Electrical Conductivity	µS/cm	-	1098
5	Salinity	ppt	-	594
6	COD	mg / l	IS : 2488 (Part 5) -1976	140.8
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	19.4
8	ORP	mV	-	870
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	4.5

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/WW/SEML/2023-24/071

Date: 21.09.2023

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 15.09.2023	Analysis Starting Date	: 16.09.2023
Quantity received	: 2 lit	Analysis Completion Date	: 21.09.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.80 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17)-1984	24
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	520
4	Electrical Conductivity	µS/cm	-	840
5	Salinity	ppt	-	532
6	COD	mg / l	IS : 2488 (Part 5) -1976	92.6
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	12.8
8	ORP	mV	-	894
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/WW/SEML/2023-24/078

Date: 25.10.2023

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 14.10.2023	Analysis Starting Date	: 15.10.2023
Quantity received	: 2 lit	Analysis Completion Date	: 25.10.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.86 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) -1984	21
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	548
4	Electrical Conductivity	µS/cm	-	886
5	Salinity	ppt	-	554
6	COD	mg / l	IS : 2488 (Part 5) -1976	86.6
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	11.5
8	ORP	mV	-	902
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/WW/SEML/2023-24/108

Date: 30.11.2023

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 9.11.2023	Analysis Starting Date	: 10.11.2023
Quantity received	: 2 lit	Analysis Completion Date	: 18.11.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.70 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17)-1984	16
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	566
4	Electrical Conductivity	µS/cm	-	912
5	Salinity	ppt	-	570
6	COD	mg / l	IS : 2488 (Part 5)-1976	72.5
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44)-1993	10.3
8	ORP	mV	-	896
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/WW/SEML/2023-24/127

Date: 4.01.2024

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref

: As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 23.12.2023	Analysis Starting Date	: 24.12.2023
Quantity received	: 2 lit	Analysis Completion Date	: 30.12.2023
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.82 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) -1984	22
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	594
4	Electrical Conductivity	µS/cm	-	960
5	Salinity	ppt	-	582
6	COD	mg / l	IS : 2488 (Part 5) -1976	75.3
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	16.2
8	ORP	mV	-	874
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory

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Telefax : 0712 - 2241 836

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

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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 - 401 506.



EAEPL/WW/SEML/2023-24/140

Date: 30.01.2024

ISSUED TO:
**M/s. Sarda Energy & Minerals Ltd.,
 (1.44MTPA Coal Mines)
 Vill: Karwahi, Khamari, Bajarmuda & Others
 Tah.: Tamnar, Dist.: Raigarh (C. G.)**

Your Ref

: As Per Work Order

Sample Particulars: Mines Sump Water

 Sample Registration Date : 25.01.2024
 Quantity received : 2 lit

 Analysis Starting Date : 26.01.2024
 Analysis Completion Date : 30.01.2024
 Sampled by : EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.78 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) -1984	26
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	610
4	Electrical Conductivity	µS/cm	-	986
5	Salinity	ppt	-	590
6	COD	mg / l	IS : 2488 (Part 5) -1976	64.6
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	15.5
8	ORP	mV	-	882
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.


 Authorized Signatory

EAEPL/WW/SEML/2023-24/149

Date: 29.02.2024

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref : As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date	: 17.02.2024	Analysis Starting Date	: 18.02.2024
Quantity received	: 2 lit	Analysis Completion Date	: 26.02.2024
		Sampled by	: EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value	-	IS : 3025 (Part 11)-1983	7.80 at 25°C
2	TSS	mg / l	IS : 3025 (Part 17) -1984	30
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	648
4	Electrical Conductivity	µS/cm	-	1046
5	Salinity	ppt	-	602
6	COD	mg / l	IS : 2488 (Part 5) -1976	67.7
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	16.1
8	ORP	mV	-	870
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

EAEPL/WW/SEML/2023-24/171

Date: 30.03.2024

ISSUED TO:

M/s. Sarda Energy & Minerals Ltd.,
(1.44MTPA Coal Mines)
Vill: Karwahi, Khamari, Bajarmuda & Others
Tah.: Tamnar, Dist.: Raigarh (C. G.)

Your Ref

: As Per Work Order

Sample Particulars: Mines Sump Water

Sample Registration Date : 23.03.2024

Analysis Starting Date : 24.03.2024

Quantity received : 2 lit

Analysis Completion Date : 29.03.2024

Sampled by : EAEPL Representative

TEST RESULTS

Sr. No.	Test Parameters	Measurement Unit	Method	Result
1	pH Value at 25°C	-	IS : 3025 (Part 11)-1983	7.82
2	TSS	mg / l	IS : 3025 (Part 17) -1984	24
3	Total Dissolved Solids (TDS)	mg / l	IS : 3025 (Part 16)-1984	672
4	Electrical Conductivity	µS/cm	-	1086
5	Salinity	ppt	-	624
6	COD	mg / l	IS : 2488 (Part 5) -1976	62.8
7	BOD at 27°C for 3 days	mg / l	IS : 3025 (Part 44) -1993	15.9
8	ORP	mV	-	884
9	Oil & Grease	mg / l	IS : 3025 (Part 39)-1991	< 4.0

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

REMARKS: As per work Order, sample was tested for above mentioned parameters only.

For Enviro Analysts & Engineers Pvt. Ltd.

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Fugitive Dust Monitoring

Fugitive Dust Monitoring Report for the month of March 2024	
Location	SPM ($\mu\text{g}/\text{m}^3$)
Near Stockyard (Loading & Unloading)	696
Nera OB Dump	603
Near Haul Road for Dump No. 1	578
Near Haul Road for Dump No. 2	552

Fugitive Dust Monitoring Report for the month April 2023	
Location	SPM ($\mu\text{g}/\text{m}^3$)
Near Stockyard (Loading & Unloading)	1024
Nera OB Dump	730
Near Haul Road For Dump No. 1	782
Near Haul Road For Dump No. 2	816

***Month wise Fugitive Dust Monitoring Reports for the period of April 2023 to March 2024 is enclosed.**



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EAEPL/FE/SEML/2023-24/011/1

Date: 29.04.2023

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 : Shrly

Sampling Date : 19.04.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	1024
2	Near OB Dump No. 2	730
3	Near Haul Road for Dump No. 1	782
4	Near Haul Road for Dump No. 2	816
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.

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Pune - 411 030.
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Workshop :
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EAEPL/FE/SEML/2023-24/024/1

Date: 1.06.2023

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 : 13.05.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	936
2	Near OB Dump No. 2	634
3	Near Haul Road for Dump No. 1	730
4	Near Haul Road for Dump No. 2	682
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/FE/SEML/2023-24/038/1

Date: 28.06.2023

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 8.06.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	982
2	Near OB Dump No. 2	680
3	Near Haul Road for Dump No. 1	758
4	Near Haul Road for Dump No. 2	711
	CPCB Standards	1200

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Tel. : 020-2432 4444

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EAEPL/FE/SEML/2023-24/048/1

Date: 28.07.2023

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 14.07.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	762
2	Near OB Dump No. 2	578
3	Near Haul Road for Dump No. 1	633
4	Near Haul Road for Dump No. 2	654
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/FE/SEML/2023-24/056

Date: 26.08.2023

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : Shrlly

Sampling Date : 10.08.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	822
2	Near OB Dump No. 2	605
3	Near Haul Road for Dump No. 1	658
4	Near Haul Road for Dump No. 2	681
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/FE/SEML/2023-24/071

Date: 21.09.2023

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 15.09.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	768
2	Near OB Dump No. 2	577
3	Near Haul Road for Dump No. 1	564
4	Near Haul Road for Dump No. 2	538
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/FE/SEML/2023-24/078

Date: 25.10.2023

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : Shrlly

Sampling Date : 12.10.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	784
2	Near OB Dump No. 2	596
3	Near Haul Road for Dump No. 1	582
4	Near Haul Road for Dump No. 2	555
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

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EAEPL/FE/SEML/2023-24/108

Date: 30.11.2023

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 9.11.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	726
2	Near OB Dump No. 2	570
3	Near Haul Road for Dump No. 1	544
4	Near Haul Road for Dump No. 2	528
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/FE/SEML/2023-24/127/1

Date: 4.01.2024

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 21.12.2023

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	690
2	Near OB Dump No. 2	552
3	Near Haul Road for Dump No. 1	560
4	Near Haul Road for Dump No. 2	504
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.

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

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City S. No. 209, B/1, Sadashiv Peth,
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Tel. : 022-2811 6442

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EAEPL/FE/SEML/2023-24/140/1

Date: 30.01.2024

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 25.01.2024

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	674
2	Near OB Dump No. 2	570
3	Near Haul Road for Dump No. 1	582
4	Near Haul Road for Dump No. 2	540
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory

EAEPL/FE/SEML/2023-24/149/1

Date: 29.02.2024

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 15.02.2024

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	688
2	Near OB Dump No. 2	592
3	Near Haul Road for Dump No. 1	564
4	Near Haul Road for Dump No. 2	528
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory

EAEPL/FE/SEML/2023-24/171/1

Date: 30.03.2024

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

Sample Particulars : Fugitive Dust Monitoring

Duration of Sampling : 8hrly

Sampling Date : 21.03.2024

TEST REPORT

Sl. No.	Location	SPM $\mu\text{g}/\text{m}^3$
1	Near Stockyard (Loading & Unloading)	696
2	Near OB Dump No. 2	603
3	Near Haul Road for Dump No. 1	578
4	Near Haul Road for Dump No. 2	552
	CPCB Standards	1200

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory



Noise Monitoring Results

Noise Monitoring Result (dBA) for the Month of March 2024		
LOCATION	DAY	NIGHT
Near Weigh Bridge	62.5	59.7
Pata Village	46.6	43.0
Near DG Set	72.8	67.1
Near Work Shop	63.6	61.0

Noise Monitoring Result (dBA) for the Month of April 2023		
LOCATION	DAY	NIGHT
Near Weigh Bridge	64.8	60.0
Pata Village	45.9	41.0
Near DG Set	73.1	66.9
Near Work Shop	68.3	62.4

***Month wise Noise Monitoring Reports for the period of April 2023 to March 2024 is enclosed.**



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EAEPL/N/SEML/2023-24/011

Date: 29.04.2023

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: 18.04.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	64.8	60.0
2	Pata Village	45.9	41.0
3	Near DG Set	73.1	66.9
4	Near Work Shop	68.3	62.4
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

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Tel. : 022-2811 6442

Workshop :
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EAEPL/N/SEML/2023-24/024

Date: 1.06.2023

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: 12.05.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	62.8	58.7
2	Pata Village	46.5	41.5
3	Near DG Set	72.9	67.7
4	Near Work Shop	63.8	60.2
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/N/SEML/2023-24/038

Date: 28.06.2023

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 7.06.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	64.1	60.3
2	Pata Village	47.2	42.4
3	Near DG Set	73.6	68.8
4	Near Work Shop	66.4	61.7
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

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EAEPL/N/SEML/2023-24/048

Date: 28.07.2023

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 13.07.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	61.7	58.8
2	Pata Village	46.4	42.0
3	Near DG Set	73.1	68.2
4	Near Work Shop	64.7	60.3
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/N/SEML/2023-24/056

Date: 26.08.2023

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 9.08.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	63.1	59.5
2	Pata Village	46.8	43.4
3	Near DG Set	72.8	67.7
4	Near Work Shop	65.1	61.2
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/N/SEML/2023-24/071

Date: 21.09.2023

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 14.09.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	64.4	61.3
2	Pata Village	45.8	42.6
3	Near DG Set	71.9	66.3
4	Near Work Shop	63.8	60.5
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

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EAEPL/N/SEML/2023-24/078

Date: 25.10.2023

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 11.10.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	63.1	60.8
2	Pata Village	46.2	43.4
3	Near DG Set	73.1	66.8
4	Near Work Shop	61.9	59.6
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

For Enviro Analysts & Engineers Pvt. Ltd.

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EAEPL/N/SEML/2023-24/108

Date: 30.11.2023

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 8.11.2023

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	62.5	60.2
2	Pata Village	45.7	42.2
3	Near DG Set	73.3	67.1
4	Near Work Shop	63.0	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/2023-24/141

Date: 30.01.2024

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 24.01.2024

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	63.5	60.1
2	Pata Village	46.7	42.2
3	Near DG Set	72.9	66.9
4	Near Work Shop	61.7	59.4
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

For Enviro Analysts & Engineers Pvt. Ltd.


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EAEPL/N/SEML/2023-24/149
Date: 29.02.2024

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 14.02.2024

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	63.7	60.8
2	Pata Village	47.2	43.5
3	Near DG Set	73.1	68.3
4	Near Work Shop	63.0	60.4
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

EAEPL/N/SEML/2023-24/171

Date: 30.03.2024

Issued to	:	M/s Sarda Energy & Minerals Ltd. (1.44MTPA Coal Mines) Vill: Karwahi, Khamaria, Bajarmuda & Others Tehsil: Tamnar, District: Raigarh (C.G)
Sample Particulars	:	Noise Monitoring Report

Date of Sampling: 20.03.2024

SL. NO.	LOCATION	RESULT (dBA)	
		DAY	NIGHT
1	Near Weigh Bridge	62.5	59.7
2	Pata Village	46.6	43.0
3	Near DG Set	72.8	67.1
4	Near Work Shop	63.6	61.0
	CPCB Standards		
	Industrial Area	75	70
	Residential Area	55	45

For Enviro Analysts & Engineers Pvt. Ltd.



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MINE SUMP WATER RESULTS

RESULT OF GROUND WATER QUALITY

Ground Water Quality Report for the month of March 2024						
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	7.84
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	716	720
7	Fluoride (as F)	mg / l	1.0	1.5	1.0	0.99
8	Chlorides (as Cl)	mg / l	250	1000	78.2	81.0
9	Total Alkalinity (as	mg / l	200	600	236	229
10	Total Hardness as (mg / l	200	600	326	330
11	Calcium (as Ca)	mg / l	75	200	83.0	84.2
12	Magnesium (as Mg)	mg / l	30	100	28.8	29.0
13	Sulphate (as SO ₄)	mg / l	200	400	54.2	56.6
14	Nitrates (as NO ₃)	mg / l	45	100	2.30	2.45
15	Total Iron (as Fe)	mg / l	0.3	1.0	0.32	0.31
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	0.0185	0.0181
19	Mercury (as Hg)	mg / l	0.001	No	<0.0005	<0.0005
20	Cadmium (as Cd)	mg / l	0.003	No	<0.001	<0.001
21	Selenium (as Se)	mg / l	0.01	No	<0.001	<0.001
22	Arsenic (as As)	mg / l	0.01	0.05	<0.01	<0.01
23	Lead (as Pb)	mg / l	0.05	No	<0.001	<0.001
24	Zinc (as Zn)	mg / l	5	15	2.37	2.33
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	0.29	0.30
28	Mineral Oil	ppm	0.05	No	<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	0.0001	No relaxation	<0.03	<0.03
32	E. Coli	CFU/100ml	Absent	Absent	Absent	Absent
33	Residual Chlorine	ppm	Min.0.2	1.0	Nil	Nil
34	Total Coliform	MPN/100	Absent	Absent	Absent	Absent

Sample 1: Bore Well near Time Office.

Sample 2: Bore Well near Mine Office.



Ground Water Quality Report for the month of April 2023						
Sr. No	Test Parameters	Measurement Unit	As per IS : 10500 : 1991 (Drinking Water - Specification)		Results Sample - 1	Results Sample - 1
			Acceptable Limit	Permissible Limit		
1	pH Value	-	6.5 to 8.5	No Relaxation	8.02	7.90
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 (TDS)	mg / l	500	2000	720	726
7	Fluoride (as F)	mg / l	1.0	1.5	1.02	0.97
8	Chlorides (as Cl)	mg / l	250	1000	34.5	35.0
9	Total Alkalinity (as CaCO ₃)	mg / l	200	600	248	240
10	Total Hardness as (CaCO ₃)	mg / l	200	600	300	304
11	Calcium (as Ca)	mg / l	75	200	77.2	78.8
12	Magnesium (as Mg)	mg / l	30	100	26.0	26.0
13	Sulphate (as SO ₄)	mg / l	200	400	28.4	29.2
14	Nitrates (as NO ₃)	mg / l	45	100	3.10	2.80
15	Total Iron (as Fe)	mg / l	0.3	1.0	0.27	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	0.025	0.028
19	Mercury (as Hg)	mg / l	0.001	No	<0.0005	<0.0005
20	Cadmium (as Cd)	mg / l	0.003	No	<0.001	<0.001
21	Selenium (as Se)	mg / l	0.01	No	<0.001	<0.001
22	Arsenic (as As)	mg / l	0.01	0.05	<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	1.60	1.64
25	Total 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	0.138	0.142
28	Mineral Oil	ppm	0.05	No	<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	0.0001	No Relaxation	<0.03	<0.03
32	Residual Chlorine	ppm	Min.0.2	1.0	Nil	Nil
33	E.Coli	CFU/1	Absent	Absent	Absent	Absent
34	Total Coliform	MPN/1	Absent	10	Absent	Absent

***Month wise Ground Water Quality Reports for the period of April 2023 to March 2024 is enclosed.**



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EAEPL/W/SEML/2023-24/011

Date: 29.04.2023

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	: 21.04.2023	Analysis Starting Date	: 22.04.2023
Quantity received	: 2 lit	Analysis Completion Date	: 29.04.2023
		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	8.02	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	720	726
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	1.02	0.97
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	34.5	35.0
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	248	240
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	300	304
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	77.2	78.8
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	26.0	26.0
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	28.4	29.2
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	3.10	2.80
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.27	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	0.025	0.028
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, Bunglow No. 65,
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EAEPL/W/SEML/2023-24/011

Date: 29.04.2023

Issue to

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

VIII: 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	: 21.04.2023	Analysis Starting Date	: 22.04.2023
Quantity received	: 2 lit	Analysis Completion Date	: 29.04.2023
		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	1.60	1.64
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	0.138	0.142
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

Nagpur Branch :
Shiv Kunj, Bungalow No. 65,
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Page 1 of 2

EAEPL/W/SEML/2023-24/024

Date: 1.06.2023

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	: 13.05.2023	Analysis Starting Date	: 14.05.2023
Quantity received	: 2 lit	Analysis Completion Date	: 22.05.2023
		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	8.03	8.10
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	746
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	0.98	1.01
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	36.2	37.5
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	244	252
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	306	328
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	78.2	80.6
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	26.9	30.7
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	31.2	33.5
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.35	2.47
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.29	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	0.018	0.016
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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EAEPL/W/SEML/2023-24/024

Date: 1.06.2023

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 : 13.05.2023

Analysis Starting Date : 14.05.2023

Quantity received : 2 lit

Analysis Completion Date : 22.05.2023

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	2.05	2.17
25	Total Chromium (as Cr)	mg / l	IS : 3025 (Part II)-2004	0.05	No relaxation	< 0.01	< 0.01
26	Aluminium 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	0.18
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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Plot No. E - 122,
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Boisar,
Dist. - Thane - 401 506.



EAEPL/W/SEML/2022-23/038

Date: 28.06.2023

Issue to
M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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 : 10.06.2023	Analysis Starting Date : 11.06.2023
Quantity received : 2 lit	Analysis Completion Date : 25.06.2023
	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	8.10	7.88
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	738	762
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	0.97	1.0
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	48.2	56.6
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	252	240
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	306	322
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	78.2	80.8
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	26.9	29.2
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	31.6	41.3
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.45	2.72
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.29	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	0.021	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

EAEPL/W/SEML/2022-23/038

Date: 28.06.2023

Issue to
M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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 : 10.06.2023	Analysis Starting Date : 11.06.2023
Quantity received : 2 lit	Analysis Completion Date : 25.06.2023
	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	2.29	2.41
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	0.23	0.27
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

EAEPL/W/SEML/2022-23/048

Date: 28.07.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.44MTPA 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	: 14.07.2023	Analysis Starting Date	: 15.07.2023
Quantity received	: 2 lit	Analysis Completion Date	: 25.07.2023
		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	8.12	7.95
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	770	784
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	1.0	1.0
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	59.3	62.2
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	258	250
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	324	330
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	81.2	82.5
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	29.4	30.0
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	39.5	43.5
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.62	2.80
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.295	0.306
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	0.022	0.025
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



EAEPL/W/SEML/2022-23/048

Date: 28.07.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.44MTPA 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	: 14.07.2023	Analysis Starting Date	: 15.07.2023
Quantity received	: 2 lit	Analysis Completion Date	: 25.07.2023
		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	2.32	2.45
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	0.26	0.31
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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EAEPL/W/SEML/2022-23/056

Date: 26.08.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.44MTPA Coal Mines)

Vill: Karwahi, Khamaria, Bajarmuda & Others

Tehsil: Tannar, 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	: 12.08.2023	Analysis Starting Date	: 12.08.2023
Quantity received	: 2 lit	Analysis Completion Date	: 24.08.2023
		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	7.90	7.82
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	692	714
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	0.96	0.98
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	51.2	57.7
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	210	204
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	302	310
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	79.8	80.5
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	24.9	26.4
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	40.7	41.1
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.70	2.85
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.26	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	0.018	0.021
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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EAEPL/W/SEML/2022-23/056

Date: 26.08.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.44MTPA 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	: 12.08.2023	Analysis Starting Date	: 12.08.2023
Quantity received	: 2 lit	Analysis Completion Date	: 24.08.2023
		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	2.17	2.22
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	0.24	0.27
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/2022-23/071

Date: 21.09.2023

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 15.09.2023	Analysis Starting Date	: 16.09.2023
Quantity received	: 2 lit	Analysis Completion Date	: 21.09.2023
		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	7.76	7.71
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	602
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	0.87	0.90
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	43.5	48.1
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	192	186
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	300	600	246	260
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	73.5	74.0
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	15.1	18.2
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	32.6	35.5
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.55	260
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	0.012	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 :
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EAEPL/W/SEML/2022-23/071

Date: 21.09.2023

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.44MTPA 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 : 15.09.2023

Analysis Starting Date : 16.09.2023

Quantity received : 2 lit

Analysis Completion Date : 21.09.2023

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	1.85	1.91
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	0.17
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/2022-23/078

Date: 25.10.2023

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 14.10.2023	Analysis Starting Date	: 15.10.2023
Quantity received	: 2 lit	Analysis Completion Date	: 25.10.2023
		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	7.81	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	614	623
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	0.90	0.90
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	46.1	50.5
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	204	195
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	257	272
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	75.2	76.8
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	16.8	19.4
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	37.1	39.3
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.62	2.82
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.23	0.24
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.

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EAEPL/W/SEML/2022-23/078

Date: 25.10.2023

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 14.10.2023	Analysis Starting Date	: 15.10.2023
Quantity received	: 2 lit	Analysis Completion Date	: 25.10.2023
		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	1.93	2.04
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	0.16	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	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/2022-23/108

Date: 30.11.2023

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 9.11.2023	Analysis Starting Date	: 10.11.2023
Quantity received	: 2 lit	Analysis Completion Date	: 18.11.2023
		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	7.85	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	630	642
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	55.8	57.7
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	215	204
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	270	278
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	76.0	77.2
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	19.4	20.6
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	39.6	41.1
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.55	2.70
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.25	0.26
16	Cyanide	mg / l	IS 3025 : 1985 (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	0.017
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

Nagpur Branch :
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Tel. : 020-2432 4444

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ENVIRO FOR A BETTER ENVIRONMENT



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NABET Accredited & MoEF (Govt. of India) approved

CIN No. : U28900MH1985PTC093129



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Page 2 of 2

EAEPL/W/SEML/2022-23/108

Date: 30.11.2023

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 9.11.2023	Analysis Starting Date	: 10.11.2023
Quantity received	: 2 lit	Analysis Completion Date	: 18.11.2023
		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	1.97	2.10
25	Total Chromium (as Cr)	mg / l	IS : 3025 (Part II)-2004	0.05	No relaxation	< 0.01	< 0.01
26	Aluminium 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	0.20	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	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

Nagpur Branch :
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SOBHAM PURA BETTER ENVIRONMENT



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CIN No. : U28900MH1995PTC093129



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Page 1 of 2

EAEPL/W/SEML/2023-24/127

Date: 4.01.2024

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 23.12.2023	Analysis Starting Date	: 24.12.2023
Quantity received	: 2 lit	Analysis Completion Date	: 3.01.2024
		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 8.3	No relaxation	7.78	7.75
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	656	670
7	Fluoride (as F)	mg / l	IS : 3025 1964	1.0	1.5	0.95	0.96
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988	250	1000	60.3	62.8
9	Total Alkalinity (as CaCO ₃)	mg / l	IS : 3025 (Part 23)-1986	200	600	220	212
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-1983	200	600	294	296
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	24.2	23.9
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)-1986	200	400	41.3	44.0
14	Nitrates (as NO ₃)	mg / l	IS : 3025 (Part 34)-1988	45	100	2.70	2.85
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part -II)-2004	0.3	1.0	0.28	0.283
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	0.0184	0.0158
19	Mercury (as Hg)	mg / l	IS : 3025 (Part II)-2004	0.01	No relaxation	< 0.0005	< 0.0005

For Enviro Analysts & Engineers Pvt. Ltd.

Authorized Signatory

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Page 2 of 2

EAEPL/W/SEML/2023-24/127

Date: 4.01.2024

Issue to

M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 23.12.2023	Analysis Starting Date	: 24.12.2023
Quantity received	: 2 lit	Analysis Completion Date	: 3.01.2024
		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	2.04	2.13
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	0.22	0.25
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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Tel. : 022-2811 3442

Workshop :
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Boisar,
Dist. - Thane - 401 508.



EAEPL/W/SEML/2023-24/140

Date: 30.01.2024

Issue to
M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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	: 25.01.2024	Analysis Starting Date	: 26.01.2024
Quantity received	: 2 lit	Analysis Completion Date	: 30.01.2024
		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)-2022	6.5 to 8.5	No relaxation	7.80	7.77
2	Turbidity NTU	NTU	IS : 3025 (Part 10)-2023	1	5	0.1	0.1
3	Apparent Colour	Hazen units	IS : 3025 (Part 4)-2021	5	15	0.1	0.1
4	Odour	-	IS : 3025 (Part 5)-2018	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	680	692
7	Fluoride (as F)	mg / l	APHA 4500 F, D (24 th Edition)	1.0	1.5	0.97	0.98
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988 Reaffirmed 2019	250	1000	64.1	65.0
9	Total Alkalinity (as CaCO ₃)	mg / l	IS 3025 (Part 23) 2023	200	600	226	220
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-2009	200	600	306	310
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	78.2	81.3
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	26.85	26.0
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)sec-1-2022	200	400	43.3	47.1
14	Nitrates (as NO ₃)	mg / l	APHA 4500 B (24 th Edition)	45	100	2.50	2.60
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part II) 2019	0.3	1.0	0.29	0.288
16	Cyanide	mg / l	IS : 3025 (Part II) 2019	0.05	No relaxation	< 0.005	< 0.005
17	Copper (as Cu)	mg / l	IS : 3025 (Part II) 2019	0.05	1.5	< 0.03	< 0.03
18	Manganese (as Mn)	mg / l	IS : 3025 (Part II) 2019	0.1	0.3	0.0186	0.0164
19	Mercury (as Hg)	mg / l	IS : 3025 (Part II) 2019	0.001	No relaxation	< 0.0005	< 0.0005

For Enviro Analysts & Engineers Pvt. Ltd.



 Authorized Signatory

EAEPL/W/SEML/2023-24/140

Date: 30.01.2024

Issue to
M/s Sarda Energy & Minerals Ltd.

(1.44MTPA 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	: 25.01.2024	Analysis Starting Date	: 26.01.2024
Quantity received	: 2 lit	Analysis Completion Date	: 30.01.2024
		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	0.005	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	2.16
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	0.24	0.28
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

EAEPL/W/SEML/2023-24/149

Date: 29.02.2024

Issue to
M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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 : 17.02.2024

Analysis Starting Date : 18.02.2024

Quantity received : 2 lit

Analysis Completion Date : 28.02.2024

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)-2022	6.5 to 8.5	No relaxation	7.85	7.79
2	Turbidity NTU	NTU	IS : 3025 (Part 10)-2023	1	5	0.1	0.1
3	Apparent Colour	Hazen units	IS : 3025 (Part 4)-2021	5	15	0.1	0.1
4	Odour	-	IS : 3025 (Part 5)-2018	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	694	704
7	Fluoride (as F)	mg / l	APHA 4500 F, D (24 th Edition)	1.0	1.5	0.99	0.99
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988 Reaffirmed 2019	250	1000	67.7	68.4
9	Total Alkalinity (as CaCO ₃)	mg / l	IS 3025 (Part 23) 2023	200	600	230	226
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-2009	200	600	315	322
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	80.2	82.0
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	27.8	28.4
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)see-1, 2022	200	400	46.1	49.3
14	Nitrates (as NO ₃)	mg / l	APHA 4500 B (24 th Edition)	45	100	2.55	2.60
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part 10) 2019	0.3	1.0	0.30	0.295
16	Cyanide	mg / l	IS : 3025 (Part II) 2019	0.05	No relaxation	< 0.005	< 0.005
17	Copper (as Cu)	mg / l	IS : 3025 (Part II) 2019	0.05	1.5	< 0.03	< 0.03
18	Manganese (as Mn)	mg / l	IS : 3025 (Part II) 2019	0.1	0.3	0.0191	0.0177
19	Mercury (as Hg)	mg / l	IS : 3025 (Part II) 2019	0.001	No relaxation	< 0.0005	< 0.0005

For Enviro Analysts & Engineers Pvt. Ltd.



Authorized Signatory

EAEPL/W/SEML/2023-24/149

Date: 29.02.2024

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.44MTPA 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 : 17.02.2024

Analysis Starting Date : 18.02.2024

Quantity received : 2 lit

Analysis Completion Date : 28.02.2024

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	2.34	2.30
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	3	0.27	0.31
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	CFLU/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

EAEPL/W/SEML/2023-24/171
Date: 30.03.2024
Issue to
M/s Sarda Energy & Minerals Ltd.
(1.44MTPA 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 : 23.03.2024

Analysis Starting Date : 24.03.2024

Quantity received : 2 lit

Analysis Completion Date : 30.03.2024

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)-2022	6.5 to 8.5	No relaxation	7.90	7.84
2	Turbidity NTU	NTU	IS : 3025 (Part 10)-2023	1	5	0.1	0.1
3	Apparent Colour	Hazen units	IS : 3025 (Part 4)-2021	5	15	0.1	0.1
4	Odour	-	IS : 3025 (Part 5)-2018	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	716	720
7	Fluoride (as F)	mg / l	APHA 4500 F, D (24 th Edition)	1.0	1.5	1.0	0.99
8	Chlorides (as Cl)	mg / l	IS : 3025 (Part 32)-1988 Reaffirmed 2019	250	1000	78.2	81.0
9	Total Alkalinity (as CaCO ₃)	mg / l	IS 3025 (Part 23) 2023	200	600	236	229
10	Total Hardness as (CaCO ₃)	mg / l	IS : 3025 (Part 21)-2009	200	600	326	330
11	Calcium (as Ca)	mg / l	IS : 3025 (Part 40)-1991	75	200	83.0	84.2
12	Magnesium (as Mg)	mg / l	IS : 3025 (Part 46)-1994	30	100	28.8	29.0
13	Sulphate (as SO ₄)	mg / l	IS : 3025 (Part 24)sec-1-2022	200	400	54.2	56.6
14	Nitrates (as NO ₃)	mg / l	APHA 4500 B (24 th Edition)	45	100	2.30	2.45
15	Total Iron (as Fe)	mg / l	IS : 3025 (Part II) 2019	0.3	1.0	0.32	0.31
16	Cyanide	mg / l	IS : 3025 (Part II) 2019	0.05	No relaxation	< 0.005	< 0.005
17	Copper (as Cu)	mg / l	IS : 3025 (Part II) 2019	0.05	1.5	< 0.03	< 0.03
18	Manganese (as Mn)	mg / l	IS : 3025 (Part II) 2019	0.1	0.3	0.0185	0.0181
19	Mercury (as Hg)	mg / l	IS : 3025 (Part II) 2019	0.001	No relaxation	< 0.0005	< 0.0005

For Enviro Analysts & Engineers Pvt. Ltd.


EAEPL/W/SEML/2023-24/171

Date: 30.03.2024

Issue to

M/s Sarda Energy & Minerals Ltd.

(1.44MTPA 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 : 23.03.2024

Analysis Starting Date : 24.03.2024

Quantity received : 2 lit

Analysis Completion Date : 30.03.2024

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	2.37	2.33
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	0.29	0.30
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



RESULT OF WATER LEVEL MONITORING

Water Level Monitoring Report for the Month of April , 2023		
Sr. No.	Location	Depth to water level (m bgl)
1.	Bore Well Near Main Gate Entry gate	21.30
2.	Bore Well Near Work Shop	20.90

Water Level Monitoring Report for the Month of August, 2023		
Sr. No.	Location	Depth to water level (m bgl)
1.	Bore Well Near Main Gate Entry gate	22.50
2.	Bore Well Near Work Shop	23.20

Water Level Monitoring Report for the Month of December, 2023		
Sr. No.	Location	Depth to water level (m bgl)
1.	Bore Well Near Main Gate Entry gate	24.70
2.	Bore Well Near Work Shop	24.95

***Month wise Water Level Monitoring Reports for the period of April 2023 to March 2024 is enclosed.**



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

Ground Water level monitoring for April-2023

Sr. No.	Location	Depth to water level (m bgl)	Date of monitoring
1.	Near Main Entry gate	21.30 m	21.04.2023
2.	Near Work Shop	20.90 m	21.04.2023

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.


Authorized Signatory

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Pune Branch:
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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,
MIDC Tarapur,
Boisar,
Dist. - Thane - 401 506.





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Ground Water level monitoring for August -2023

Sr. No.	Location	Depth to water level (m bgl)	Date of monitoring
1.	Near Main Entry gate	22.50 m	12.08.2023
2.	Near Work Shop	23.20 m	12.08.2023

Forwarded with compliments to **M/s SARDA ENERGY & MINERALS LIMITED**
1.44MTPA Coal Mines
Vill: Karwahi, Khamaria, Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory



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

Ground Water level monitoring for Dec -2023

Sr. No.	Location	Depth to water level (m bgl)	Date of monitoring
1.	Near Main Entry gate	24.70 m	23.12.2023
2.	Near Work Shop	24.95 m	23.12.2023

Forwarded with compliments to **M/s SARDA ENERGY & MINERALS LIMITED**
1.44MTPA Coal Mines
Vill: Karwahi, Khamaria, Bajarmuda & Others
Tehsil: Tamnar, District: Raigarh (C.G)

For Enviro Analysts & Engineers Pvt. Ltd.


Authorized Signatory



PART – D

	HAZARDOUS WASTE	During financial year 2022 –23	During financial year 2023 –24
		QUANTITY (Ton)	QUANTITY (Ton)
1	From process	10.02	14.82
2	From pollution control facilities	NA	NA

PART – E

SOLID WASTE

Generation step		Quantity	
		During financial year 2022 –23	During financial year 2023 –24
1. From Process	Top soil	1,98,500 CUM	1,50,000 CUM
	Sandstone & Shale	46,32,996 CUM	38,88,252 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. Back filling work has been started in the de-coaled area and plantation is being started.



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 42,370 by the end of March 2024.
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 33,600 Nos. of trees will be planted in the year 2024–25.
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
2022 – 23	17,470	-
2023 – 24	24,900	-
2024 – 25	-	33,600

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 2022-2023	Expenditure (in Rs.) Year 2023-2024	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	18,000 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	


