Environment Management and Engineering Division (Environmental Laboratory)

Agriculture College Campus, Next to DIC office, Shivaji Nagar, Pune. 411 005, Ph. No. 66289405/400, email: emelab@mitconindia.com

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Format No. EME/LAB/Format 7.8/TR

Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3078

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3078/2	
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023	
Tirodi Manganese Mines L3=4.419 Ha Site, Dist:- Balaghat (M.P)	Type of Monitoring	Ambient Air	
	Test Location	Near Pit Office	
	Monitoring Done By	MITCON	
	Date of Analysis	02/03/2023	

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO ₂)	μg/M³	12.8	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	16.0	≤80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	63.8	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	34.7	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.9	≤ 1.00	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.326	≤ 2.0	IS 5182
08	Ammonia (NH₃)	μg/M³	4.1	≤ 400	APHA - 401
09	Benzene (C₅H₅)	μg/M³	BDL	≤ 5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤ 6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)

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Format No. EME/LAB/Format 7.8/TR

Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3078

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3078/3
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
	Type of Monitoring	Ambient Noise
Tirodi Manganese Mines L3=4.419 Ha Site, Dist:- Balaghat (M.P).	Monitoring Done By	MITCON

READINGS

Sr. No.	Test Location	Unit	Readings
01	Near Pit Office	dB(A)	63.4

REMARKS / OBSERVATIONS:

Limits: The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

Qi,

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)

Authorized Signatory

Dr. Sandeep Jadhav (Senior Vice President)

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3078

Issue Date:09/03/2023

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3078/1
	Name of Sample	Ground Water
Tirodi Manganese Mines L3=4.419 Ha Site, Dist:- Balaghat (M.P)	Sample Details	Near Pit office Water supply
	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
,	Sample Collected On	28/02/2023
	Date of Sample Receipt	02/03/2023
	Analysis Start Date	02/03/2023
	End Date of Analysis	09/03/2023

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.20	awar na s	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	< 5.0	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1.0	NTU	ं ≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	247.8	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	125.25	mg/l	≤200	APHA 2340 C ₃ 2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	51.20	mg/l	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed: 2017
. 07	Magnesium as Mg	23.12	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
80	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	111.24	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	52.32	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as 504	18.34	mg/l	≤ 200	APHA 4500 SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	3.34	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

The above water sample is complying with required limits as per IS 10500:2012.

For MITCON Consultancy & Engineering Services Ltd.

(Mrs. Kadambari Deshmukh)

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3292

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3292/3	
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023	
,	Type of Monitoring	Ambient Air Near Sampling Room	
Tirodi Manganese Mines L2=37.090 Ha Site, Dist:-	Test Location		
Balaghat (M.P)	Monitoring Done By	MITCON	
·	Date of Analysis	02/03/2023	

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb .Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

		As Alath Call Control of the Control			A. A
Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO₂)	μg/M³	11.8	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	15.6	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	61.5	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	29.6	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.5	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.324	≤ 2.0	IS 5182
08	Ammonia (NH ₃)	μg/M³	3.8	≤ 400	APHA - 401
09	Benzene (C₅H₅)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)

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Test Report

Report Number: MITCON/2022-23/March/3292

Issue Date:09/03/2023

Reference No.	MITCON/2022-23/March/3292/4
Date of Monitoring	28/02/2023
Type of Monitoring	Ambient Air
Test Location	Near Dumping area
Monitoring Done By	MITCON
Date of Analysis	02/03/2023
	Date of Monitoring Type of Monitoring Test Location Monitoring Done By

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO ₂)	μg/M³	12.6	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	17.9	≤ 80′	IS 5182(Part 6)
03	Particulate Matter PM _{10 micron}	μg/M³	63.7	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM _{2.5 micron}	μg/M³	21.5	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.8	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.338	≤ 2.0	IS 5182
08	Ammonia (NH ₃)	μg/M³	4.0	≤ 400	APHA - 401
09	Benzene (C ₆ H ₆)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤ 1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/M³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)



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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3292

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3292/5
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
,	Type of Monitoring	Ambient Noise
Tirodi Manganese Mines L2=37.090 Ha Site, Dist:-	Monitoring Done By	MITCON
Balaghat (M.P).		

READINGS

Sr. No.	Test Location	Unit	Readings
01	Near Sampling Room	dB(A)	59.9
02	Near Dumping Area	dB(A)	61.3

REMIARKS / OBSERVATIONS:

Limits

The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)



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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3292

Issue Date:09/03/2023

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3292/1
	Name of Sample	Ground Water
Tirodi Manganese Mines L2=37.090 Ha Site,	Sample Details	Near Sampling Room Water supply
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
	Sample Collected On	28/02/2023
	Date of Sample Receipt	02/03/2023
	Analysis Start Date	02/03/2023
	End Date of Analysis	09/03/2023

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.10	-	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	<5.0	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1.0	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	232.4	mg/l	≤500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	110.24	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	32.14	mg/l	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
. 07	Magnesium as Mg	15.24	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	<0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	91.14	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	20.56	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	7.53	mg/l	≤ 200	APHA 4500 -SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	5.52	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	<5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
1.8	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

• The above water sample is complying with required limits as per IS 10500:2012.

For MITCON Consultancy & Engineering Services Ltd?

Kuneowh Checked By

(Mrs. Kadambari Deshmukh)

Authorized Signatory (Or.Sandeep Jadhav) Senior Vice President

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Quarter January- February- March 2023

Format No. EME/LAB/Format 7.8/TR

Test Report

Report Number: MITCON/2022-23/March/3292

Issue Date:09/03/2023

Solutions for Sustainable Tomorrow

Client's Name & Address		Sample Details
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3292/2
·	Name of Sample	Ground water
Tirodi Manganese Mines L2=37.090 Ha Site,	Sample Details	Near Dumping area water supply
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
	Sample Collected On	28/02/2023
	Date of Sample Receipt	02/03/2023
	Analysis Start Date	02/03/2023
	End Date of Analysis	09/03/2023

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.14	5000 C	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	< 5.0	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1.0	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	290.6	mg/l	≤ 500	APHA 2540 C; 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	140.25	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	35.14	mg/l	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	13.26	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed, 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	113.25	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	41.25	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	21.15	· mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	<0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	10.20	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	<5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

For MITCON Consultancy & Engineering Services Ltd.

KUpのWh Checked By

(Mrs. Kadambari Deshmukh)



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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3291/5
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
	Type of Monitoring	Ambient Air
Tirodi Manganese Mines L1=254.593 Ha Site, Dist:-	Test Location	Near Mine Office
Balaghat (M.P)	Monitoring Done By	MITCON
	Date of Analysis	02/03/2023

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	· 18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO ₂)	μg/M³	13.0	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	17.2	≤80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	60.1	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	29.8	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.8	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.340	≤ 2.0	IS 5182
08	Ammonia (NH₃)	μg/M³	4.0	≤ 400	APHA - 401
09	Benzene (C ₆ H ₆)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	<u>≤1</u>	IS 5182
11	Arsenic (As)	ng/M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M ³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- ➢ BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3291/6
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
	Type of Monitoring	Ambient Air
Tirodi Manganese Mines L1=254.593 Ha Site, Dist:-	Test Location	Officer Colony
Balaghat (M.P).	Monitoring Done By	MITCON
	Date of Analysis	02/03/2023

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

Sr.	Description	Unit	Results	CPCB standard	A STATE OF THE STA
No.			Nesults	Creb Standard	Test Method
01	Sulphur Dioxide (SO ₂)	μg/M³	12.0	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	15.4	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM _{10 micron}	μg/M³	59.9	≤ 100	IS 5182 (Part 23)
. 04	Particulate Matter PM2.5 micron	μg/M³	28.2	≤60	USEPA 40 CFRCH
05	Ozone (O ₃)	μg/M³	3.6	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.310	≤ 2.0	IS 5182
08	Ammonia (NH ₃)	μg/M³	3.8	≤ 400	APHA - 401
09	Benzene (C₀H₀)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/M³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

kunenuh Checked By

(Mrs.Kadambari Deshmukh)

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Quarter January- February- March 2023

Format No. EME/LAB/Format 7.8/TR

Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3291/7
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
Tirodi Manganese Mines L1=254.593 Ha Site, Dist:-	Type of Monitoring	Ambient Air
	Test Location	Near Guest House
Balaghat (M.P).	Monitoring Done By	MITCON
	Date of Analysis	02/03/2023

OBSERVATION

Ambient Temp.	Dry Bulb Temp. °C	Wet Bulb Temp. ℃	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO ₂)	μg/M³	11.2	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	14.6	≤80	IS 5182(Part 6)
03	Particulate Matter PM ₁₀ micron	μg/M³	53.6	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	25.6	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.0	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	
07	Carbon Monoxide (CO)	mg/M³	0.214	≤ 2.0	APHA - AAS
08	Ammonia (NH ₃)	μg/M³	3.2	≤ 400	IS 5182
09	Benzene (C ₆ H ₆)	μg/M³	BDL	≤5	APHA - 401
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL		IS 5182
11	Arsenic (As)	ng/ M³		≤1	IS 5182
12	Nickel (Ni)	ng/ M³	BDL	≤6	APHA - AAS
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	116/ 101	BDL	<u>≤</u> 20	APHA - AAS

REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3291/8
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
Tirodi Manganese Mines L1=254.593 Ha Site, Dist:- Balaghat (M.P).	Type of Monitoring	Ambient Air
	Test Location	Near Tirodi Village
	Monitoring Done By	MITCON
	Date of Analysis	02/03/2023

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO ₂)	μg/M³	11.8	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	15.0	≤80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	55.8	≤100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μ g/M ³	25.0	≤ 60	USEPA 40 CFRCH
05	Ozone (O ₃)	μg/M³	3.2	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M ³	0.254	≤ 2.0	IS 5182
80	Ammonia (NH₃)	μg/M³	3.4	≤ 400	APHA - 401
09	Benzene (C ₆ H ₆)	μg/M³	BDL	≤5	IS 5182
10 a #	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- BDL: Below Detection Limit.

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Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3291/9
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
	Type of Monitoring	Ambient Noise
Tirodi Manganese Mines L1=254,593 Ha Site, Dist:- Balaghat (M.P).	Monitoring Done By	MITCON

READINGS

Sr. No.	Test Location	Unit	Readings
01	01 Mine Office Premises		57.8
02	Dumper Loader	dB(A)	68,2
03	Jack hammer Drill Machine	dB(A)	70.2
04	Near Excavator .	dB(A)	72.0

REMARKS / OBSERVATIONS:

Limits: The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)



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Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3291/1		
Cirodi Manganese Mines L1=254.593 Ha Site, Dist:- Balaghat (M.P)	Name of Sample	Ground Water		
	Sample Details	Open Dugwell No. 3		
	Container Details	1 lit plastic can		
	Sample Collected By	MITCON		
•	Method of sampling	IS 3025(Part I)		
	Sample Collected On	28/02/2023		
	Date of Sample Receipt	02/03/2023		
	Analysis Start Date	02/03/2023		
	End Date of Analysis	09/03/2023		

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.20	_	6.5 to 8.5	ADITA IDAQUI
02	Total suspended solids	<5	mg/l	N.S	APHA 4500 H+, A, 4-95, 23rd Ed 2017 APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1	
04	Total Dissolved Solids	289.4	mg/l	≤1 ≤500	IS: 3025 Part-10 (R.A : 2002)
05	Total Hardness as CaCO3	142.23	mg/l	≤200	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017 APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	38.16	mg/l	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	16.24	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	120.25	Mg/l	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l		
11	Chloride as CI	21.56	mg/l	<1 ≤ 250	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
12	Sulphate as SO4	20.74	mg/l	≤ 200	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
14	Nitrate as NO3	5.53	mg/l	≤45	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
15	E.coli	Absent	MPN/100ml	Absent	APHA 4500 NO3-B,4-127 23rd Ed 2017
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	<5	HZ	≤5	IS: 1622 (R.A : 2014) IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

COLTANOP

REMARKS / OBSERVATIONS:

The above water sample is complying with required limits as per IS 10500:2012.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Sample Details		
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3291/2	
	Name of Sample	Waste Water	
Tirodi Manganese Mines L1=254.593 Ha Site, Dist:- Balaghat (M.P)	Sample Details	Mine discharge water Block No. A-B Pit	
•	Container Details	1 lit plastic can	
	Sample Collected By	MITCON	
	Method of sampling	IS 3025(Part I)	
	Sample Collected On	28/02/2023	
	Date of Sample Receipt	02/03/2023	
•	Analysis Start Date	02/03/2023	
	End Date of Analysis	09/03/2023	

ANALYSIS RESULTS

Sr. No.	Characteristic	Results	Unit	Permissible Limit as per Consent Condition	Test Methods
01	pH at 25°C	7.19		5.5 to 9.0	APHA 4500 H+ A, 4-95, 23rd Ed. 2017
02	Dissolved Oxygen	3.1	mg/l		IS: 3025 Part 38
03	Chemical Oxygen Demand	<i>7</i> 5.0	mg/l	250	APHA 5220 C,5-20 to 5-21 23rd Ed 2017
04	Biochemical Oxygen	23.1	mg/l	30	IS :3025 (Part 44)
05	Total suspended solids	27.0	mg/l	100	APHA 2540 D,2-70 to 2-71 23 rd Ed 2017
06	Oil and grease	< 5.0	mg/l	10	APHA 5520 B,5-42 to 5-43 23rd Ed 2017
07	Manganese	0.34	mg/l	2	APHA 3111 B,3-18 to 3-21 23rd Ed 2017

REMARKS / OBSERVATIONS:

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)

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Test Report

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Issue Date:09/03/2023

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3291/3		
	Name of Sample	Ground water		
Tirodi Manganese Mines L1=254,593 Ha Site,	Sample Details	Officer colony water supply		
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can		
	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
	Sample Collected On	28/02/2023		
	Date of Sample Receipt	02/03/2023		
•	Analysis Start Date	02/03/2023		
	End Date of Analysis	09/03/2023		

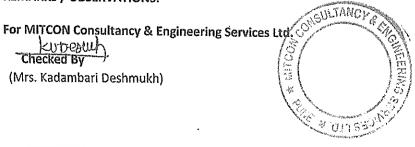
ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.21	-	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	< 5.0	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1.0	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	260.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3		mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca		mg/l	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg		mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
80	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3		Mg/l	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl		mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4		mg/l	≤ 200	APHA 4500 –SO4 - E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	<0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3		mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3291

Issue Date:09/03/2023

Client's Name & Address	Sample Details			
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3291/4		
T' 1776	Name of Sample	Ground Water		
Tirodi Manganese Mines L1=254.593 Ha Site,	Sample Details	Staff Quarter water supply		
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can		
	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
	Sample Collected On	28/02/2023		
	Date of Sample Receipt	02/03/2023		
	Analysis Start Date	02/03/2023		
	End Date of Analysis	09/03/2023		

ANALYSIS RESULTS

Sr. No.	Parameters	Results	· Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.19	ire ecological (*	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	< 5.0	mg/l	N:S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1.0	NTU	≤1	Is: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	230,9	mg/l	≤500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3		mg/l	≤200	APHA 2340 C,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	1. (2.) 1. (2.)	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	84.74.4 11.44	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
80	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3		Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl		mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4		mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3		mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Agreeable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

For MITCON Consultancy & Engineering Services Ltd.

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(Mrs. Kadambari Deshmukh)

Morized Signatory (Dr.Sandeep Jadhav) Senior Vice President

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3079

Issue Date:09/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3079/3	
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023	
,	Type of Monitoring	Ambient Air	
Tirodi Manganese Mines North Railway Siding,	Test Location	North Railway Siding office	
Dist:- Balaghat (M.P).	Monitoring Done By	MITCON	
	Date of Analysis	02/03/2023	

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

	Jake Angayangan Ja	ARTIGUE A	ia stalekwatani.	, days	
Sr.	Description	Unit	Results	CPCB standard	Test Method
No.		<u> </u>			
01	Sulphur Dioxide (SO₂)	μg/M³	11.5	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO2)	μg/M³	16.3	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM _{10 micron}	μg/M³	60.7	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM _{2.5 micron}	μg/M³	31.6	≤ 60	USEPA 40 CFRCH
05	Ozone (O ₃)	μg/M³	3.8	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.336	≤ 2.0	IS 5182
08	Ammonia (NH ₃)	μg/M³	4.1	≤ 400	APHA - 401
09	Benzene (C ₆ H ₆)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)



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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3079

Issue Date:09/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3079/4
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
	Type of Monitoring	Ambient Air
Tirodi Manganese Mines North Railway Siding,	Test Location	End of North Railway siding
Dist:- Balaghat (M.P).	Monitoring Done By	MITCON
	Date of Analysis	02/03/2023

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO₂)	μg/M³	12.8	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	17.0	≤80	IS 5182(Part 6)
03	Particulate Matter PM _{20 micron}	μg/M³	66.5	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	33.7	≤ 60	USEPA 40 CFRCH
05	Ozone (O ₃)	μg/M³	3.9	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.355	≤ 2.0	IS 5182
08	Ammonia (NH₃)	μg/M³	4.3	≤ 400.	APHA - 401
09	Benzene (C₀H₀)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤ 6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

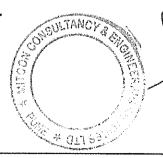
REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs.Kadambari Deshmukh)



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Format No. EME/LAB/Format 7.8/TR

Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3079

Issue Date:09/03/2022

Client's Name & Address	Reference No.	MITCON/2022-23/March/3079/5
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
Tirodi Manganese Mines North Railway Siding,	Type of Monitoring	Ambient Noise
Dist:- Balaghat (M.P).	Monitoring Done By	MITCON

READINGS

Sr. No.	Test Location	Unit	Re	eadings	
01	North Railway Siding office		dB(A)		58.9
02	End of North Railway siding		dB(A)		61.3

REMARKS / OBSERVATIONS:

Limits: The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

For MITCON Consultancy & Engineering Services Ltd.

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Format No. EME/LAB/Format 7.8/TR

Test Report

Report Number: MITCON/2022-23/March/3079

Issue Date:09/03/2022

Client's Name & Address	Sample Details		
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3079/1	
,	Name of Sample	Ground Water	
Tirodi Manganese Mines North Railway Siding,	Sample Details	North Railway siding water supply	
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can	
,	Sample Collected By	MITCON	
	Method of sampling	IS 3025(Part I)	
	Sample Collected On	28/02/2023	
	Date of Sample Receipt	02/03/2023	
	Analysis Start Date	02/03/2023	
	End Date of Analysis	09/03/2023	

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.27		6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	8.0	mg/I	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1.0	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	301.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	152.21	mg/l	. ≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	38.12	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	17,34	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	145.24	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	48.72	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	18.25	mg/l	≤ 200	APHA 4500 -SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	8.93	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Aggreable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

• The above water sample is complying with required limits as per IS 10500:2012.

For MITCON Consultancy & Engineering Services Ltd.

Kupeaulh Checked By

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Test Report

Report Number: MITCON/2022-23/March/3079

Issue Date:09/03/2022

Client's Name & Address		Sample Details		
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3079/2		
**************************************	Name of Sample	Ground water		
Tirodi Manganese Mines North Railway Siding,	Sample Details	End of North railway siding water supply		
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can		
ŭ	Sample Collected By	MITCON		
	Method of sampling	IS 3025(Part I)		
	Sample Collected On	28/02/2023		
	Date of Sample Receipt	02/03/2023		
,	Analysis Start Date	02/03/2023		
	End Date of Analysis	09/03/2023		

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.20		6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	12.0	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	< 1.0	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	301.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	140.28	mg/l	. ≤200	APHA 2340 C , 2-48 to 2-50, 23rd Ed 2017
06	Calcium as Ca	42.24	mg/l	≤ 75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	14.26	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
80	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	135.25	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/I	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	32.20	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	10.25	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	3.72	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	<5·	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Aggreable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

For MITCON Consultancy & Engineering Services Ltd.

Checked By

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Format No. EME/LAB/Format 7.8/TR

Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3712

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3712/3
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
·	Type of Monitoring	Ambient Air
Tirodi Manganese Mines South Railway Siding,	Test Location	South Railway Siding office
Dist:- Balaghat (M.P).	Monitoring Done By	MITCON
	Date of Analysis	02/03/2023

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
32	32	18	12	1440	0.0	6.0 km/ hrs.(Avg)	SSE

RESULT

		A LONG TO			
Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO ₂)	μg/M³	12.2	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO ₂)	μg/M³	17.4	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	μg/M³	60.5	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM _{2.5 micron}	μg/M³	31.8	≤ 60	USEPA 40 CFRCH
05	Ozone (O₃)	μg/M³	3.6	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.318	≤ 2.0	IS 5182
08	Ammonia (NH ₃)	μg/M³	4.0	≤ 400	APHA - 401
09	Benzene (C₀H₀)	μg/M³	BDL	≤5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/ M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

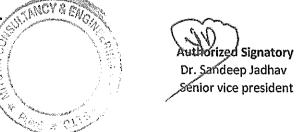
REMARKS/OBSERVATIONS:

- > All above results are within National Ambient Air Quality standards.
- ➢ BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

<u>| (a) neemb</u> Checked By

(Mrs.Kadambari Deshmukh)



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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3712

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3712/4
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
	Type of Monitoring	Ambient Air
Tirodi Manganese Mines South Railway Siding, Dist:- Balaghat (M.P).	Test Location	End of South Railway siding
	Monitoring Done By	MITCON
	Date of Analysis	02/03/2023

OBSERVATION

Ambient Temp. °C	Dry Bulb Temp. °C	Wet Bulb Temp. °C	Relative Humidity % RH	Sampling Duration In Min	Rainfall (mm)	Wind Velocity	Wind Direction
30	30	13	50	1440	0.0	5.0 km/ hrs.(Avg)	E

RESULT

Sr. No.	Description	Unit	Results	CPCB standard	Test Method
01	Sulphur Dioxide (SO₂)	μg/M³	11.8	≤80	IS 5182(Part 2)
02	Oxides of Nitrogen (NO2)	μg/M³	16.2	≤ 80	IS 5182(Part 6)
03	Particulate Matter PM10 micron	hB∖W₃	59.3	≤ 100	IS 5182 (Part 23)
04	Particulate Matter PM2.5 micron	μg/M³	29.4	≤ 60	USEPA 40 CFRCH
05	Ozone (O ₃)	μg/M³	3.7	≤ 100	IS 5182
06	Lead (Pb)	μg/M³	BDL	≤ 1.0	APHA - AAS
07	Carbon Monoxide (CO)	mg/M³	0.314	≤ 2.0	IS 5182
80	Ammonia (NH₃)	μg/M³	3.9	≤ 400	APHA - 401
09	Benzene (C₅H₅)	μg/M³	BDL	≤ 5	IS 5182
10	Benzo(a)Pyrene (BaP)	ng/M³	BDL	≤1	IS 5182
11	Arsenic (As)	ng/ M³	BDL	≤6	APHA - AAS
12	Nickel (Ni)	ng/ M³	BDL	≤ 20	APHA - AAS

REMARKS/OBSERVATIONS:

- All above results are within National Ambient Air Quality standards.
- > BDL: Below Detection Limit.

For MITCON Consultancy & Engineering Services Ltd.

Checked By

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Test Report

Report Number: MITCON/2022-23/March/3712

Issue Date:09/03/2023

Client's Name & Address	Reference No.	MITCON/2022-23/March/3712/5
M/s MOIL LIMITED,	Date of Monitoring	28/02/2023
1	Type of Monitoring	Ambient Noise
Tirodi Manganese Mines South Railway Siding, Dist:- Balaghat (M.P).	Monitoring Done By	MITCON

READINGS

Sr. No.	Test Location		Unit	Readings
01	South Railway Siding office		dB(A)	58.7
4 5.04	processor of the supplemental contracts one of the	a stellar til sen	. 1	Au tilet sien
02	End of South Railway siding		dB(A)	56.5

REMARKS / OBSERVATIONS:

Limits: The Madhya Pradesh Pollution Control Board has prescribe 75 dB (A) as an upper limit of Noise Level during daytime.

For MITCON Consultancy & Engineering Services Ltd.

(Mrs. Kadambari Deshmukh)



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Test Report

Report Number: MITCON/2022-23/March/3712

Issue Date:09/03/2023

Client's Name & Address	Sample Details		
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3712/1	
,	Name of Sample	Ground Water	
Tirodi Manganese Mines South Railway Siding,	Sample Details	South Railway siding water supply	
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can	
	Sample Collected By	MITCON	
	Method of sampling	IS 3025(Part I)	
•	Sample Collected On	28/02/2023	
	Date of Sample Receipt	02/03/2023	
	Analysis Start Date	02/03/2023	
	End Date of Analysis	09/03/2023	

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.12	-	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	12,0	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	235.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	115.20	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	40.08	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	16,52	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	×0,1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	108.10	Mg/l	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	20.12	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	15.40	mg/l	≤ 200	APHA 4500 -SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≤ 0.3	APHA 3111 8, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	10.12	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Aggreable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

The above water sample is complying with required limits as per IS 10500:2012.

For MITCON Consultancy & Engineering Services Ltd. (Solio) 1

Experie Checked By

(Mrs. Kadambari Deshmukh)

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Quarter January- February- March 2023

Test Report

Report Number: MITCON/2022-23/March/3712

Issue Date:09/03/2023

Client's Name & Address	Sample Details	
M/s MOIL LIMITED,	Sample Code	MITCON/2022-23/March/3712/2
11410 2140 42 221144 == ,	Name of Sample	Ground water
Tirodi Manganese Mines South Railway Siding,	Sample Details	End of South railway siding water supply
Dist:- Balaghat (M.P)	Container Details	1 lit plastic can
	Sample Collected By	MITCON
	Method of sampling	IS 3025(Part I)
	Sample Collected On	28/02/2023
	Date of Sample Receipt	02/03/2023
	Analysis Start Date	02/03/2023
	End Date of Analysis	09/03/2023

ANALYSIS RESULTS

Sr. No.	Parameters	Results	Unit	Limits as per IS 10500:2012	Test Methods
01	pH at 25C	7.19	-	6.5 to 8.5	APHA 4500 H+, A, 4-95, 23rd Ed 2017
02	Total suspended solids	10.0	mg/l	N.S	APHA 2540 D,2-70 to 2-71 23rd ed 2017
03	Turbidity	<1	NTU	≤1	IS: 3025 Part-10 (R.A : 2002)
04	Total Dissolved Solids	212.3	mg/l	≤ 500	APHA 2540 C, 2-69 to 2-70, 23rd Ed 2017
05	Total Hardness as CaCO3	101.2	mg/l	≤200	APHA 2340 C ,2-48 to 2-50,23rd Ed 2017
06	Calcium as Ca	37.4	mg/l	≤75	APHA 3500 Ca B , 3-69 to 3-70 , 23rd Ed. 2017
07	Magnesium as Mg	13.7	mg/l	≤30	APHA 3500 Mg B, 3-86 , 23rd Ed. 2017
08	Mangnese as mn	< 0.1	mg/l	< 0.1	APHA 3111 B, 3-18 to 3-21 23rd Ed. 2017
09	Total Alkalinity as Caco3	95.25	Mg/I	<200	APHA 2320 B ,2-37 to 2-39 23rd Ed 2017
10	Fluoride as F	< 0.1	Mg/l	<1.	APHA 4500 F- D 4-90 to 4-9123rd Ed 2017
11	Chloride as Cl	13.25	mg/l	≤ 250	APHA 4500 Cl, B, 4-75 to 4-76, 23rd Ed 2017
12	Sulphate as SO4	11.02	mg/l	≤ 200	APHA 4500 –SO4E, 4-199 TO 4-200, 23rd Ed 2017
13	Iron as Fe	< 0.05	mg/l	≲ 0.3	APHA 3111 B, 3-18 TO 3-21, 23rd Ed 2017 (using AAS)
14	Nitrate as NO3	5.23	mg/l	≤45	APHA 4500 NO3-B,4-127 23rd Ed 2017
15	E.coli	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
16	Total Coliform	Absent	MPN/100ml	Absent	IS: 1622 (R.A : 2014)
17	colour	< 5	HZ	≤5	IS: 3025 Part-4 (Rev.1, RA 2012)
18	odour	Aggreable	Agreeable	Agreeable	IS: 3025 Part-5 (Rev.1, RA 2012)

REMARKS / OBSERVATIONS:

For MITCON Consultancy & Engineering Services Ltd.

Checked By

(Mrs. Kadambari Deshmukh)

Withopized Signatory (ಲ್ಲ್. Sandeep Jadhav) Senior Vice President

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