



SV ENVIRO LABS & CONSULTANTS

(Environmental Engineers & Consultants in Pollution Control)

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Branch Office : 2-53, Mahipala Street, Yanam - 533464.

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Ref: SVELC/RIL-JLM/20-08/01

Date: 18-09-2020

NAME AND ADDRESS : M/s. JAGGAYYAPETA LIMESTONE MINE,
Visakhapatnam Steel Plant,
Jaggayapeta-521175.
Krishna District ,A.P.

SAMPLE PARTICULARS : SURFACE WATER

SOURCE OF COLLECTION : PALERU RIVER UPSTREAM

DATE OF COLLECTION : 28-08-2020

TEST REPORT

S.No	Parameter	Unit	Result	Nov-2019	Standards as per GSR 422 (E)
1	Colour	Hazen	< 1.0	< 1.0	5
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable
3	Turbidity	NTU	0.85	0.76	5 - 25
4	pH	-	7.96	8.14	5.5 to 9.0
5	Total Dissolved Solids	mg/l	396	588	500 - 2000
6	Total suspended solids	mg/l	3.0	06	100
7	Fluorides as F	mg/l	1.19	1.28	2.0
8	Nitrates as NO ₃ ⁻	mg/l	2.62	0.99	10
9	Iron as Fe	mg/l	0.06	0.07	3.0
10	Total Residual Chlorine	mg/l	<0.1	<0.1	1.0
11	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.0005	<0.0005	1.0
12	Copper as Cu	mg/l	< 0.01	< 0.01	3.0
13	Manganese as Mn	mg/l	< 0.01	< 0.01	2.0
14	Zinc as Zn	mg/l	0.07	0.08	5.0
15	Sulphide as S	mg/l	< 0.01	< 0.01	2.0
16	Cadmium as Cd	mg/l	<0.01	<0.01	2.0
17	Lead as Pb	mg/l	<0.01	<0.01	0.1
18	Mercury as Hg	mg/l	<0.001	<0.001	0.01
19	Nickel as Ni	mg/l	<0.01	<0.01	3.0
20	Total Arsenic as As	mg/l	<0.01	<0.01	0.2
21	Total Chromium as Cr	mg/l	<0.01	<0.01	2.0
22	Hexavalent chromium as Cr ⁺⁶	mg/l	< 0.05	< 0.05	0.1
23	Vanadium as V	mg/l	<0.01	<0.01	0.2
24	Ammonical nitrogen as N	mg/l	BDL	BDL	50
25	Free ammonia as NH ₃	mg/l	< 0.1	< 0.1	5
26	Chemical oxygen demand -COD	mg/l	<10.0	<10.0	250
27	Biochemical oxygen demand -BOD	mg/l	<3.0	<3.0	30
28	Oil & Grease	mg/l	<1.0	<1.0	10
29	Selenium as Se	mg/l	<0.01	<0.01	0.05

Note: All the above parameters are tested as per APHA methods, 23rd Edition, 2017

BDL- Below detectable limit, Detectable limit <0.005 µg/l


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Ref: SVELC/RIL-JLM/20-08/02

Date: 18-09-2020

NAME AND ADDRESS : M/s. JAGGAYYAPETA LIMESTONE MINE,
Visakhapatnam Steel Plant,
Jaggayapeta-521175.
Krishna District ,A.P.

SAMPLE PARTICULARS : SURFACE WATER

SOURCE OF COLLECTION : PALERU RIVER DOWN STREAM

DATE OF COLLECTION : 28-08-2020

TEST REPORT


S.No	Parameter	Unit	Result	Nov-2019	Standards as per GSR 422 (E)
1	Colour	Hazen	< 1.0	< 1.0	5
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable
3	Turbidity	NTU	1.99	7.49	5 - 25
4	pH	-	7.75	8.03	5.5 to 9.0
5	Total Dissolved Solids	mg/l	422	634	500 - 2000
6	Total suspended solids	mg/l	5.0	7.0	100
7	Fluorides as F	mg/l	1.21	1.30	2.0
8	Nitrates as NO ₃ ⁻	mg/l	5.34	1.305	10
9	Iron as Fe	mg/l	0.09	0.12	3.0
10	Total Residual Chlorine	mg/l	<0.1	<0.1	1.0
11	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.0005	<0.0005	1.0
12	Copper as Cu	mg/l	< 0.01	< 0.01	3.0
13	Manganese as Mn	mg/l	< 0.01	< 0.01	2.0
14	Zinc as Zn	mg/l	0.11	0.15	5.0
15	Sulphide as S	mg/l	< 0.01	< 0.01	2.0
16	Cadmium as Cd	mg/l	<0.01	<0.01	2.0
17	Lead as Pb	mg/l	<0.01	<0.01	0.1
18	Mercury as Hg	mg/l	<0.001	<0.001	0.01
19	Nickel as Ni	mg/l	<0.01	<0.01	3.0
20	Total Arsenic as As	mg/l	<0.01	<0.01	0.2
21	Total Chromium as Cr	mg/l	<0.01	<0.01	2.0
22	Hexavalent chromium as Cr ⁶⁺	mg/l	< 0.05	< 0.05	0.1
23	Vanadium as V	mg/l	<0.01	<0.01	0.2
24	Ammonical nitrogen as N	mg/l	BDL	BDL	50
25	Free ammonia as NH ₃	mg/l	< 0.1	< 0.1	5
26	Chemical oxygen demand -COD	mg/l	<10.0	10	250
27	Biochemical oxygen demand -BOD	mg/l	<3.0	<3.0	30
28	Oil & Grease	mg/l	<1.0	<1.0	10
29	Selenium as Se	mg/l	<0.01	<0.01	0.05

Note: All the above parameters are tested as per APHA methods, 23rd Edition, 2017

BDL- Below detectable limit, Detectable limit- <0.005 µg/l


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Ref: SVELC/RIL-JLM/20-08/03

Date: 18-09-2020

NAME AND ADDRESS : M/s. JAGGAYYAPETA LIMESTONE MINE,
Visakhapatnam Steel Plant,
Jaggayapeta-521175.
Krishna District ,A.P.

SAMPLE PARTICULARS : SURFACE WATER

SOURCE OF COLLECTION : MINE SUMP WATER

DATE OF COLLECTION : 28-08-2020

TEST REPORT

S.No	Parameter	Unit	Result	Nov-2019	Standards as per GSR 422 (E)
1	Colour	Hazen	< 1.0	< 1.0	5
2	Odour	Agreeable	Agreeable	Agreeable	Agreeable
3	Turbidity	NTU	<0.01	1.70	5 - 25
4	pH	-	7.65	7.64	5.5 to 9.0
5	Total Dissolved Solids	mg/l	260	170	500 - 2000
6	Total suspended solids	mg/l	22	11	100
7	Fluorides as F	mg/l	0.21	0.18	2.0
8	Nitrates as NO ₃ ⁻	mg/l	1.74	BDL	10
9	Iron as Fe	mg/l	0.03	0.025	3.0
10	Total Residual Chlorine	mg/l	<0.1	<0.1	1.0
11	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.0005	<0.0005	1.0
12	Copper as Cu	mg/l	< 0.01	< 0.01	3.0
13	Manganese as Mn	mg/l	< 0.01	< 0.01	2.0
14	Zinc as Zn	mg/l	<0.01	<0.01	5.0
15	Sulphide as S	mg/l	< 0.01	< 0.01	2.0
16	Cadmium as Cd	mg/l	<0.01	<0.01	2.0
17	Lead as Pb	mg/l	<0.01	<0.01	0.1
18	Mercury as Hg	mg/l	<0.001	<0.001	0.01
19	Nickel as Ni	mg/l	<0.01	<0.01	3.0
20	Total Arsenic as As	mg/l	<0.01	<0.01	0.2
21	Total Chromium as Cr	mg/l	<0.01	<0.01	2.0
22	Hexavalent chromium as Cr ⁺⁶	mg/l	< 0.05	< 0.05	0.1
23	Vanadium as V	mg/l	<0.01	<0.01	0.2
24	Ammonical nitrogen as N	mg/l	BDL	BDL	50
25	Free ammonia as NH ₃	mg/l	< 0.1	< 0.1	5
26	Chemical oxygen demand -COD	mg/l	25.3	20	250
27	Biochemical oxygen demand -BOD	mg/l	8.9	<3.0	30
28	Oil & Grease	mg/l	<1.0	<1.0	10
29	Selenium as Se	mg/l	<0.01	<0.01	0.05

Note: All the above parameters are tested as per APHA methods, 23rd Edition, 2017

BDL- Below detectable limit, Detectable limit-<0.005 µg/l

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Ref: SVELC/RIL-JLM/20-08/04

Date: 18-09-2020

NAME AND ADDRESS : M/s. JAGGAYYAPETA LIMESTONE MINE,
Visakhapatnam Steel Plant,
Jaggayapeta-521175.
Krishna District ,A.P.

SAMPLE PARTICULARS : GROUND WATER

SOURCE OF COLLECTION : BOREWELL WATER (VSP TOWNSHIP)

DATE OF COLLECTION : 28-08-2020

TEST REPORT

S.No	Parameter	Unit	Result	Nov-2019	IS 10500:2012 Specifications
1.	Colour	Hazen	< 1.0	< 1.0	5.0
2.	Odour	-	Agreeable	Agreeable	Agreeable
3.	Temperature	°C	28.2	27	-
4.	Taste	-	Agreeable	Agreeable	Agreeable
5.	Turbidity	NTU	1.56	1.30	1.0
6.	pH	-	8.02	7.94	6.5 – 8.5
7.	Total Dissolved Solids	mg/l	525	436	500
8.	Total Alkalinity as CaCO ₃	mg/l	286	279	200
9.	Total Hardness as CaCO ₃	mg/l	325	313	200
10.	Calcium as Ca	mg/l	52.4	45.2	75
11.	Magnesium as Mg	mg/l	47.3	48.6	30
12.	Chlorides as Cl ⁻	mg/l	52.6	41.3	250
13.	Fluorides as F	mg/l	0.23	0.20	1.0
14.	Nitrates as NO ₃ ⁻	mg/l	9.62	5.57	45
15.	Sulphates as SO ₄ ²⁻	mg/l	12.4	7.60	200
16.	Iron as Fe	mg/l	0.16	0.18	0.3
17.	Free Residual Chlorine	mg/l	< 0.1	< 0.1	0.2
18.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.0005	<0.0005	0.001
19.	Copper as Cu	mg/l	< 0.01	< 0.01	0.05
20.	Manganese as Mn	mg/l	< 0.01	< 0.01	0.1
21.	Zinc as Zn	mg/l	0.53	0.42	5.0
22.	Aluminum as Al	mg/l	< 0.01	< 0.01	0.03
23.	Boron as B	mg/l	< 0.1	< 0.1	0.5
24.	Sulphide as H ₂ S	mg/l	< 0.01	< 0.01	0.05
25.	Anionic Detergents (as MBAS)	mg/l	< 0.01	< 0.01	0.2
26.	Barium as Ba	mg/l	0.72	0.61	0.7
27.	Chloramines (as Cl ₂)	mg/l	<1.0	<1.0	4.0
28.	Ammonia as total ammonia-N	mg/l	< 0.01	< 0.01	0.5
29.	Mineral Oil	mg/l	< 0.01	< 0.01	0.5
30.	Selenium as Se	mg/l	< 0.005	< 0.005	0.01
31.	Silver as Ag	mg/l	< 0.01	< 0.01	0.1
32.	Cadmium as Cd	mg/l	<0.001	<0.001	0.003
33.	Cyanide as CN	mg/l	<0.01	<0.01	0.05
34.	Lead as Pb	mg/l	<0.01	<0.01	0.01





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35.	Mercury as Hg	mg/l	<0.001	<0.001	0.001
36.	Molybdenum as Mo	mg/l	<0.01	<0.01	0.07
37.	Nickel as Ni	mg/l	<0.01	<0.01	0.02
38.	Total Arsenic as As	mg/l	<0.01	<0.01	0.01
39.	Total Chromium as Cr	mg/l	<0.01	<0.01	0.05
40.	Polychlorinated biphenyls	mg/l	<0.0001	<0.0001	0.0005
41.	Polynuclear aromatic Hydrocarbons as PAH	mg/l	<0.0001	<0.0001	0.0001
MICROBIOLOGY:					
42.	<i>E. coliforms</i>	CFU/100mL	Not detected	Not detected	Shall not be detected in 100 ml
43.	<i>Total coliforms</i>	CFU/100mL	Not detected	Not detected	Shall not be detected in 100 ml
44.	<i>Faecal coliforms</i>	CFU/100mL	Not detected	Not detected	-
PESTICIDES:					
45.	Alpha HCH	µg/l	BDL	BDL	0.01
46.	Beta HCH	µg/l	BDL	BDL	0.04
47.	Butachlor	µg/l	BDL	BDL	125
48.	Chlorpyrifos	µg/l	BDL	BDL	30
49.	Delta HCH	µg/l	BDL	BDL	0.04
50.	2,4- Dichlorophenoxyacetic Acid	µg/l	BDL	BDL	30
51.	DDT (o,p and p,p-Isomers of DDT, DDE and DDD)	µg/l	BDL	BDL	1.0
52.	Endosulfan (alpha, beta and Sulphate)	µg/l	BDL	BDL	0.4
53.	Ethion	µg/l	BDL	BDL	3.0
54.	Gamma-HCH (Lindane)	µg/l	BDL	BDL	2.0
55.	Isoproturon	µg/l	BDL	BDL	9.0
56.	Malathion	µg/l	BDL	BDL	190
57.	Methyl Parathion	µg/l	BDL	BDL	0.3
58.	Alachlor	µg/l	BDL	BDL	20
59.	Atrazine	µg/l	BDL	BDL	2.0
60.	Aldrin/ Dieldrin	µg/l	BDL	BDL	0.03
61.	Monocrotophos	µg/l	BDL	BDL	1.0
62.	Phorate	µg/l	BDL	BDL	2.0
TRIHALOMETHANE					
63.	Bromoform	mg/l	<0.05	<0.05	0.1
64.	Dibromochloromethane	mg/l	<0.05	<0.05	0.1
65.	Bromodichloromethane	mg/l	<0.05	<0.05	0.06
66.	chloroform	mg/l	<0.05	<0.05	0.2

Note: All the above parameters are tested as per APHA methods, 23rd Edition, 2017

BDL- Below detectable limit, Detectable limit- <0.005 µg


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Ref: SVELC/RIL-JLM/20-08/05

Date: 18-09-2020

NAME AND ADDRESS : M/s. JAGGAYYAPETA LIMESTONE MINE,
Visakhapatnam Steel Plant,
Jaggayapeta-521175.
Krishna District ,A.P.

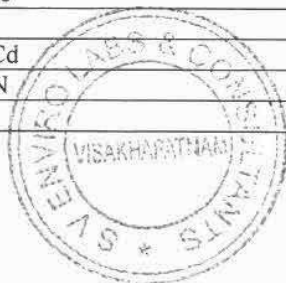
SAMPLE PARTICULARS : GROUND WATER

SOURCE OF COLLECTION : BUDAWADA BORE WELL WATER

DATE OF COLLECTION : 28-08-2020

TEST REPORT

S.No	Parameter	Unit	Result	Nov-2019	IS 10500:2012 Specifications
1.	Colour	Hazen	< 1.0	< 1.0	5.0
2.	Odour	-	Agreeable	Agreeable	Agreeable
3.	Temperature	°C	28.0	27.3	-
4.	Taste	-	Agreeable	Agreeable	Agreeable
5.	Turbidity	NTU	<0.01	0.32	1.0
6.	pH	-	7.24	7.16	6.5 – 8.5
7.	Total Dissolved Solids	mg/l	1604	1600	500
8.	Total Alkalinity as CaCO ₃	mg/l	340	248	200
9.	Total Hardness as CaCO ₃	mg/l	732	700	200
10.	Calcium as Ca	mg/l	208	221	75
11.	Magnesium as Mg	mg/l	51.5	35.9	30
12.	Chlorides as Cl ⁻	mg/l	394	484	250
13.	Fluorides as F	mg/l	1.38	1.31	1.0
14.	Nitrates as NO ₃ ⁻	mg/l	162	11.9	45
15.	Sulphates as SO ₄ ²⁻	mg/l	315	228	200
16.	Iron as Fe	mg/l	2.72	2.65	0.3
17.	Free Residual Chlorine	mg/l	< 0.1	< 0.1	0.2
18.	Phenolic Compounds as C ₆ H ₅ OH	mg/l	<0.0005	<0.0005	0.001
19.	Copper as Cu	mg/l	< 0.01	< 0.01	0.05
20.	Manganese as Mn	mg/l	< 0.01	< 0.01	0.1
21.	Zinc as Zn	mg/l	1.26	1.05	5.0
22.	Aluminum as Al	mg/l	< 0.01	< 0.01	0.03
23.	Boron as B	mg/l	< 0.1	< 0.1	0.5
24.	Sulphide as H ₂ S	mg/l	< 0.01	< 0.01	0.05
25.	Anionic Detergents (as MBAS)	mg/l	< 0.01	< 0.01	0.2
26.	Barium as Ba	mg/l	0.61	0.52	0.7
27.	Chloramines (as Cl ₂)	mg/l	<1.0	<1.0	4.0
28.	Ammonia as total ammonia-N	mg/l	< 0.01	< 0.01	0.5
29.	Mineral Oil	mg/l	< 0.01	< 0.01	0.5
30.	Selenium as Se	mg/l	< 0.005	< 0.005	0.01
31.	Silver as Ag	mg/l	< 0.01	< 0.01	0.1
32.	Cadmium as Cd	mg/l	<0.001	<0.001	0.003
33.	Cyanide as CN	mg/l	<0.01	<0.01	0.05
34.	Lead as Pb	mg/l	<0.01	<0.01	0.01





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35.	Mercury as Hg	mg/l	<0.001	<0.001	0.001
36.	Molybdenum as Mo	mg/l	<0.01	<0.01	0.07
37.	Nickel as Ni	mg/l	<0.01	<0.01	0.02
38.	Total Arsenic as As	mg/l	<0.01	<0.01	0.01
39.	Total Chromium as Cr	mg/l	<0.01	<0.01	0.05
40.	Polychlorinated biphenyls	mg/l	<0.0001	<0.0001	0.0005
41.	Polynuclear aromatic Hydrocarbons as PAH	mg/l	<0.0001	<0.0001	0.0001
MICROBIOLOGY:					
42.	<i>E. coliforms</i>	CFU/100mL	Not detected	Not detected	Shall not be detected in 100 ml
43.	<i>Total coliforms</i>	CFU/100mL	21	18	Shall not be detected in 100 ml
44.	<i>Faecal coliforms</i>	CFU/100mL	Not detected	Not detected	-
PESTICIDES:					
45.	Alpha HCH	µg/l	BDL	BDL	0.01
46.	Beta HCH	µg/l	BDL	BDL	0.04
47.	Butachlor	µg/l	BDL	BDL	125
48.	Chlorpyrifos	µg/l	BDL	BDL	30
49.	Delta HCH	µg/l	BDL	BDL	0.04
50.	2,4- Dichlorophenoxyacetic Acid	µg/l	BDL	BDL	30
51.	DDT (o,p and p,p-Isomers of DDT, DDE and DDD)	µg/l	BDL	BDL	1.0
52.	Endosulfan (alpha, beta and Sulphate)	µg/l	BDL	BDL	0.4
53.	Ethion	µg/l	BDL	BDL	3.0
54.	Gamma-HCH (Lindane)	µg/l	BDL	BDL	2.0
55.	Isoproturon	µg/l	BDL	BDL	9.0
56.	Malathion	µg/l	BDL	BDL	190
57.	Methyl Parathion	µg/l	BDL	BDL	0.3
58.	Alachlor	µg/l	BDL	BDL	20
59.	Atrazine	µg/l	BDL	BDL	2.0
60.	Aldrin/ Dieldrin	µg/l	BDL	BDL	0.03
61.	Monocrotophos	µg/l	BDL	BDL	1.0
62.	Phorate	µg/l	BDL	BDL	2.0
TRIHALOMETHANE					
63.	Bromoform	mg/l	<0.05	<0.05	0.1
64.	Dibromochloromethane	mg/l	<0.05	<0.05	0.1
65.	Bromodichloromethane	mg/l	<0.05	<0.05	0.06
66.	chloroform	mg/l	<0.05	<0.05	0.2

Note: All the above parameters are tested as per APHA methods, 23rd Edition, 2017

BDL- Below detectable limit, Detectable limit- <0.005 µg/l


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