



EMAIL :: kalikinkar.panda@nalcoindia.co.in, gm_uecb@nalcoindia.co.in

Ref: NBC/ED (P&T) 11060

Date: 02.05.2023

To The Member Secretary, State Pollution Control Board, ODISHA A-118, Paribesh Bhawan, Unit-Vili Bhubaneswar, 751012

Sub-Submission of ambient air quality monitoring report, ground water surface water and Noise monitoring report for CTO 2023-24 special condition compliance

Ref- i) SPCB, Odisha vide order dated 28.03.2023 granted Consent to Operate (CTO) for Utkal-D Coal Mine with validity period from 01.04.2023 up to 31.03.2024 via consent order no 2938.

Dear Sir,

With reference to the above CTO order special conditions, we are submitting herewith the ambient air quality monitoring report, ground water, surface water and noise monitoring report collected from UtkaI-D Coal Mine of M/s NALCO as per the CTO special condition no.18 and 19 for air monitoring and condition no 33 for Noise monitoring for kind consideration.

Thanking You,

2023

3.P.C. 180.00

Yours Faithfully, For and on behalf of NALCO

(Kalikinkar Panda) Executive Director (P&T) and Authorized Signatory

Encl- I) Ambient air quality monitoring report 2 ii) Ground water Report , iii) Surface water monitoring report iv) Noise monitoring report

Copy Submitted to-1) The Regional Officer, State Pollution Control Board , Angul, 2) IRO, MoEF Bhubaneswar

निगम कार्यालय

नेशनल एल्यूमिनियम कम्पनी लिमिटेड (भारत सरकार भा एक उद्यम)

National Aluminium Company Limited (A Government of India Enterprise) CORPORATE OFFICE

नालंको भवन, पि-1, नयापल्ली, भुवनेश्वर - 751 013, भारत Nalco Bhawan, P/1, Nayapalii,Bhubaneswar - 751 013, India फौन Telephone (EPABX) (0674) 2301988, 2301999, 2300013, 2300976, 2301550, 2303233, पेंग्सर Fax-(0674) 2201290, 2300580, 300740, 2300640 & 2300246, वेवसरह Website www.nalcoindia.com CIN: L272030R1961GOI000920





Date of Testing

:

WCS Laboratory

10.04.2023 to 15.04.2023

MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043NIZE CIN: U725010R2010PTC011651

Quantity of Sample

Sample Condition

:

l Ltr

Good :



| WCS/LQR/60 | | TEST RE | PORT | | TC-11225 |
|-------------------------|--|---|---|--|--|
| Report No. | : | WCS230402A | Issue Date | : | 17.04.2023 |
| NABL ULR No. | : | TC1122523000000042F | | | |
| Name of the Client | : | National Aluminium Company Li | mited | | |
| Address | : | | | | |
| | | | | | |
| Sampling Location | : | | | | |
| Sample Description | : | Ground Water | Date of Sampling | : | 07.04.2023 |
| | : | WCS/QSP/SAMP (WATER) | | £ | 08.04.2023 |
| Environmental Condition | : | | | | WCS0423W01 |
| Sample Collected by | : | | Quantity of Sample | 2 | 1 Ltr |
| | Report No. NABL ULR No. Name of the Client | Report No.:NABL ULR No.:Name of the Client:Address:Sampling Location:Sample Description:Sampling Plan & Method:Environmental Condition: | Report No.:WCS230402ANABL ULR No.:TC1122523000000042FName of the Client:National Aluminium Company LiAddress:Smelter & Power (S&P) Complex Angul-759145, OdishaSampling Location:Near Settling Pond (Bore Well)Sampling Plan & Method:WCS/QSP/SAMP (WATER) Temperature 29 °C, Clear Weather | Report No.:WCS230402AIssue DateNABL ULR No.:TC1122523000000042FName of the Client:National Aluminium Company LimitedAddress:Smelter & Power (S&P) Complex Angul-759145, OdishaSampling Location:Near Settling Pond (Bore Well)Sample Description:Ground WaterDate of SamplingSampling Plan & Method:WCS/QSP/SAMP (WATER)Date of ReceivingEnvironmental Condition:Temperature 29 °C, Clear WeatherSample ID No | Report No.:WCS230402AIssue Date:NABL ULR No.:TC1122523000000042FName of the Client:National Aluminium Company LimitedAddress:Smelter & Power (S&P) Complex Angul-759145, OdishaSampling Location:Near Settling Pond (Bore Well)Sample Description:Ground WaterSampling Plan & Method:WCS/QSP/SAMP (WATER)Environmental Condition:Temperature 29 °C, Clear Weather |

| | SI. No. | Parameter | Unit . | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|---|------------|------------------------------|--------|-----------|--|--|
| | 1 | Colour | Hazen | 2 | Max, 5 | IS 3025 (Part-4): 2021 |
| | 2 | Odour | - | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| | 3 | pH Value | | 6.716 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| | 4 | Taste Threshold | | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| | 5 | Turbidity | NTU | 0.4 | ī | IS 3025 (Part-10): 1984 RA 2017 |
| | 6 | Total Dissolved Solid as TDS | mg/l | 264 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| | 7 | Ammonia as Total ammonia-N | mg/l | 0.17 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| | 8 | Calcium as Ca | mg/l | 33.67 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| | 9 | Chloride as Cl | mg/l | 43.98 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| | 10 | Fluoride as F | mg/l | < 0.02 | 1.0 | APHA 23 rd Ed. (4500-F-D): 2017 |
| | 11 | Iron as Fe | mg/l | 0.06 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| | 12 | Magnesium as Mg | mg/l | 1604 | 30 | APHA 23rd Ed. (3500-Mg-B): 2017 |
| | 13 | Nitrate as NO3 | mg/l | 24.03 | 45 | APHA 23rd Ed. (4500-NO3-B): 2017 |
| | 14 | Sulphate as SO ₄ | mg/l | 10.44 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| | 15 | Total Alkalinity as CaCO3 | mg/l | 125 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| _ | 16 | Total Hardness as CaCO3 | mg/l | 150 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| | 17 | Total Chromium as Cr | mg/l | < 0.02 | 0.05 | IS 3025 (Part-52) : 2003 RA 2019 |
| | 18 | Potassium as K | mg/l | 4.7 | | IS 3025 (Part-45): 1993 RA 2019 |

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Page 1 of 2

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Report No. : WCS230402A

| 19 | Sodium as Na | mg/l | 6.8 | | IS 3025 (Part-45) : 1993 RA 2019 |
|----|------------------------------|----------------|-----|--|-----------------------------------|
| 20 | Total Suspended Solid as TSS | mg/l | <5 | - | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/ 100 ml | <1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faccal Coliform | MPN/ 100 ml | < 1 | | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/ 100 ml | 7 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Manassain for . Authorized Signatory for Microbiology (Mrs. Manaswini Rout)

Authorized Signatory for Chemical

(Mr. Pradeept Mohapatra)

- N.B.: • The results relate to the sample received in respect to the Parameters tested. • Liability for return of sample ceases after 7 days from the date of Test certificate.

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Page 2 of 2

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WCS/LQR/60

MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE CIN: U725010R2010PTC011651

TEST REPORT

| SI. | Parameter | | | | Requirement as per IS | | | - |
|------|----------------------|---|---------------|----------------------|-----------------------|---|------------|---|
| | e of Testing | : | 10.04.2023 to | o 15.04.2023 | Sample Condition | : | Good | |
| | ple Collected by | : | WCS Labora | | Quantity of Sample | : | 1 Ltr | |
| | | • | Temperature | 29 °C, Clear Weather | | : | WCS0423W01 | |
| | ironmental Condition | ÷ | | AMP (WATER) | Date of Receiving | : | 08.04.2023 | |
| | pling Plan & Method | : | Ground Wate | | Date of Sampling | : | 07.04.2023 | |
| | ple Description | • | | g Pond (Bore Well) | | | | |
| Same | pling Location | | Angul-75914 | | | | | |
| Add | ress | : | Smelter & Po | ower (S&P) Complex | | | | |
| | ne of the Client | : | National Alu | uminium Company L | imited | | | |
| | ort No. | : | WCS230402 | | Issue Date | : | 17.04.2023 | |

| SI. No | | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|-----------|--|------|-----------------|---|--|
|) 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55) : 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <u><</u> 0,1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-C1 G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0:001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47):1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |

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Page 1 of 2

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Report No. : WCS230402A

| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
|----|---|------|---------|--------|---------------------------------|
| 43 | Polynuclear aromatic hydro- carbons as PAH | mg/l | <0.0001 | 0.0001 | АРНА 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

Reviewed by (Mr. Bijaya Kumar Chahataray)

Authoriz Signatory

(Mr. Pradeept Mohapatra)

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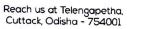




| WCS/LQR/60 | | TEST RE | PORT | | TC-11225 |
|-------------------------|---|----------------------------------|--------------------|---|------------|
| Report No. | : | WCS230402B | Issue Date | ÷ | 17.04.2023 |
| NABL ULR No. | : | TC1122523000000042F | | | |
| Name of the Client | : | National Aluminium Company Li | mited | | |
| Address | : | Smelter & Power (S&P) Complex | | | |
| | | Angul-759145, Odisha | | | |
| Sampling Location | : | Near Colony Township (Bore We | II) | | |
| Sample Description | | Ground Water | Date of Sampling | : | 07.04.2023 |
| Sampling Plan & Method | : | WCS/QSP/SAMP (WATER) | Date of Receiving | : | 08.04.2023 |
| Environmental Condition | : | Temperature 29 °C, Clear Weather | Sample ID No | : | WCS0423W02 |
| Sample Collected by | : | WCS Laboratory | Quantity of Sample | : | 1 Ltr |
| Date of Testing | : | 10.04.2023 to 15.04.2023 | Sample Condition | : | Good |

| SI. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|------------|------------------------------|-------|-----------|--|-----------------------------------|
| 1 | Colour | Hazen | 2 | Max, 5 | IS 3025 (Part-4): 2021 |
| 2 | Odour | - | Agreeable | Agreeable | IS 3025 (Part-5): 2018 |
| 3 | pH Value | - 1 | 5.854 | 6.5-8.5 | IS 3025 (Part-11): 2022 |
| 4 | Taste Threshold | - | Agreeable | Agreeable | IS 3025 (Part-7): 2017 |
| 5 | Turbidity | NTU | 0.3 | i | IS 3025 (Part-10): 1984 RA 2017 |
| 6 | Total Dissolved Solid as TDS | mg/l | 84 | 500 | IS 3025 (Part-16): 1984 RA 2017 |
| 7 | Ammonia as Total ammonia-N | mg/l | 0.09 | 0.5 | IS 3025 (Part-34): 1988 RA 2019 |
| 8 | Calcium as Ca | mg/l | 6.41 | 75 | IS 3025 (Part-40): 1991 RA 2019 |
| 9 | Chloride as Cl | mg/l | 19.99 | 250 | IS 3025(Part-32): 1988 RA 2019 |
| 10 | Fluoride as F | mg/l | < 0.02 | 1.0 | APHA 23rd Ed. (4500-F-D): 2017 |
| 11 | Iron as Fe | mg/l | 0.11 | 1.0 | IS 3025 (Part -53): 2003 RA 2019 |
| 12 | Magnesium as Mg | mg/l | 1.458 | 30 | APHA 23rd Ed. (3500-Mg-B): 2017 |
| 13 | Nitrate as NO3 | mg/l | 11.30 | 45 | APHA 23rd Ed. (4500-NO3-B): 2017 |
| 14 | Sulphate as SO4 | mg/l | 0.61 | 200 | IS 3025 (Part-24 Sec 1):2022 |
| 15 | Total Alkalinity as CaCO3 | mg/l | 10 | 200 | IS 3025 (Part-23): 1986 RA 2019 |
| 16 | Total Hardness as CaCO3 | mg/l | 22 | 200 | IS 3025 (Part-21): 2009 RA 2019 |
| 17 | Total Chromium as Cr | mg/l | < 0.02 | 0.05 | IS 3025 (Part-52) : 2003 RA 2019 |
| 18 | Potassium as K | mg/l | 4.6 | | IS 3025 (Part-45): 1993 RA 2019 |







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Report No. : WCS230402B

| 19 | Sodium as Na | mg/l | 6.2 | | IS 3025 (Part-45): 1993 RA 2019 |
|----|------------------------------|----------------|-----|--|---------------------------------|
| 20 | Total Suspended Solid as TSS | mg/l | <5 | | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/ 100 ml | < 1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/ 100 ml | < 1 | | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/ 100 ml | 2 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Manasoci for Microbiology (Mrs. Manaswini Rout)

Authorized Signatory for Chemical

(Mr. Pradeept Mohapatra)

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MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE CIN: U725010R2010PTC011651

TEST REPORT

| Report No. Name of the Client Address | :: | WCS230402B National Aluminium Company Li Smelter & Power (S&P) Complex Angul-759145, Odisha | Issue Date mited | : | 17.04.2023 |
|--|---|---|---------------------------------------|---|---|
| Sampling Location Sample Description Sampling Plan & Method Environmental Condition Sample Collected by Date of Testing | ::::::::::::::::::::::::::::::::::::::: | Near Colony Township (Bore Well Ground Water WCS/QSP/SAMP (WATER) Temperature 29 °C, Clear Weather WCS Laboratory 10.04.2023 to 15.04.2023 | Date of Sampling Date of Receiving | | 07.04.2023 08.04.2023 WCS0423W02 1 Ltr Good |

| SI. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|------------|--|------|--------|---|--|
| 24 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55) : 2003 RA 2019 |
| 25 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 26 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 27 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 28 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-C1 G |
| 29 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 30 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 31 | Mineral oil | mg/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 32 | Phenolic compounds as C ₆ H ₅ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 33 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 34 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 35 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29): 1986 RA 2019 |
| 36 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 37 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41):1992 RA 2019 |
| 38 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27): 1986 RAA 2019 |
| 39 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47): 1994 RA 2019 |
| 40 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 41 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |



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Report No. : WCS230402B

| 42 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
|----|---|------|---------|--------|---------------------------------|
| 43 | Polynuclear aromatic hydro- carbons as PAH | mg/l | <0.0001 | 0.0001 | Арна 6440 |
| 44 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

taday Reviewed by

(Mr. Bijaya Kumar Chahataray)

Authorized Signatory

(Mr. Pradeept Mohapatra)



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Date of Testing

MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE

CIN: U725010R2010PTC011651

Sample Condition



Good

| WCS/LQR/60 | | TEST RE | PORT | | TC-11225 |
|-------------------------|---|----------------------------------|--------------------|---|------------|
| Report No. | : | WCS230402C | Issue Date | : | 17.04.2023 |
| NABL ULR No. | : | TC1122523000000042F | | | |
| Name of the Client | : | National Aluminium Company Li | mited | | |
| Address | : | Smelter & Power (S&P) Complex | | | |
| | | Angul-759145, Odisha | | | |
| Sampling Location | : | Gopiballavpur Village (Tube Wel | D | | |
| Sample Description | : | Ground Water | Date of Sampling | : | 07.04.2023 |
| Sampling Plan & Method | : | WCS/QSP/SAMP (WATER) | Date of Receiving | : | 08.04.2023 |
| Environmental Condition | : | Temperature 29 °C, Clear Weather | | : | WCS0423W03 |
| Sample Collected by | : | WCS Laboratory | Quantity of Sample | : | 1 Ltr |
| | | | | | |

10.04.2023 to 15.04.2023

Requirement as per IS SI. Parameter Unit 10500:2012 Reaffirmed Result **Test Methods** No. 2018 1 Colour Hazen 10 IS 3025 (Part-4): 2021 Max, 5 2 Odour Agreeable Agreeable IS 3025 (Part-5): 2018 ---3 pH Value 6.874 6.5-8.5 IS 3025 (Part-11): 2022 ---4 Taste Threshold ---Agreeable Agreeable IS 3025 (Part-7): 2017 5 Turbidity NTU 1 1 IS 3025 (Part-10): 1984 RA 2017 6 Total Dissolved Solid as TDS mg/l 130 500 IS 3025 (Part-16): 1984 RA 2017 7 Ammonia as Total ammonia-N mg/l 0.22 0.5 IS 3025 (Part-34): 1988 RA 2019 8 Calcium as Ca mg/l 14.43 75 IS 3025 (Part-40): 1991 RA 2019 9 Chloride as Cl 57.98 mg/l 250 IS 3025(Part-32): 1988 RA 2019 10 Fluoride as F mg/l < 0.02 APHA 23rd Ed. (4500-F-D): 2017 1.0 11 Iron as Fe mg/l 0.39 1.0 IS 3025 (Part -53): 2003 RA 2019 12 Magnesium as Mg mg/l 12.64 30 APHA 23rd Ed. (3500-Mg-B): 2017 13 Nitrate as NO3 < 0.01 mg/l 45 APHA 23rd Ed. (4500-NO3-B): 2017 14 Sulphate as SO4 mg/l <1 200 IS 3025 (Part-24 Sec 1):2022 15 Total Alkalinity as CaCO3 mg/l 120 200 IS 3025 (Part-23): 1986 RA 2019 16 Total Hardness as CaCO3 mg/l 88 200 IS 3025 (Part-21): 2009 RA 2019 17 Total Chromium as Cr < 0.02 mg/l 0.05 IS 3025 (Part-52): 2003 RA 2019 18 Potassium as K mg/l 4.5 IS 3025 (Part-45): 1993 RA 2019



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Report No. : WCS230402C

| 19 | Sodium as Na | mg/l | 6.9 | | IS 3025 (Part-45): 1993 RA 2019 |
|----|------------------------------|----------------|-----|---|---------------------------------|
| 20 | Total Suspended Solid as TSS | mg/l | <5 | | IS 3025 (Part-17): 2022 |
| 21 | E.Coli | MPN/ 100 ml | < 1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |
| 22 | Faecal Coliform | MPN/ 100 ml | < 1 | | IS 1622 : 1981 RA 2019 |
| 23 | Total Coliform | MPN/ 100 ml | < 1 | Shall not be detectable in any 100 ml sample | IS 1622 : 1981 RA 2019 |

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Marasion 19.0 ' Authorized Signatory for Microbiology (Mrs. Manaswini Rout)

Authorized Signatory for Chemical

(Mr. Pradeept Mohapatra)

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MY WORLD CONSULTANCY SERVICES PRIVATE LIMITED (TESTING LABORATORY) GST NO: 21AADCT4043N1ZE CIN: U725010R2010PTC011651

TEST REPORT

| Report No. Name of the Client Address | :: | WCS230402C National Aluminium Company Li Smelter & Power (S&P) Complex | Issue Date mited | : | 17.04.2023 |
|---|----|--|---------------------------------------|---|---|
| Sampling Location | : | Angul-759145, Odisha Gopiballavpur Village (Tube Wel | 'n | | |
| Sample Description Sampling Plan & Method Environmental Condition Sample Collected by Date of Testing | | Ground Water WCS/QSP/SAMP (WATER) Temperature 29 °C, Clear Weather WCS Laboratory 10.04.2023 to 15.04.2023 | Date of Sampling Date of Receiving | | 07.04.2023 08.04.2023 WCS0423W03 1 Ltr Good |

| SI. No. | Parameter | Unit | Result | Requirement as per IS 10500:2012 Reaffirmed 2018 | Test Methods |
|------------|--|------|--------|---|--|
| 25 | Aluminium as Al | mg/l | <0.02 | 0.03 | IS 3025 (Part 55) : 2003 RA 2019 |
| 26 | Anionic detergents as MBAS | mg/l | <0.02 | 0.2 | Annex K of IS 13428 |
| 27 | Barium as Ba | mg/l | <0.1 | 0.7 | Annex F of IS 13428* or IS 15302 |
| 28 | Boron as B | mg/l | <0.1 | 0.5 | IS 3025 (Part 57):2021 |
| 29 | Chloramines as Cl ₂ | mg/l | <0.02 | 4.0 | IS 3025 (Part 26): 2021* or APHA 4500-CI G |
| 30 | Copper as Cu | mg/l | <0.01 | 0.05 | IS 3025 (Part 42):1992 RA 2019 |
| 31 | Manganese as Mn | mg/l | <0.05 | 0.1 | IS 3025 (Part 59):2006 RA 2017 |
| 32 | Mineral oil | mġ/l | <0.5 | 1.0 | Clause 6 of IS 3025 (Part 39):2021 |
| 33 | Phenolic compounds as C ₆ H ₃ OH | mg/l | <0.001 | 0.001 | IS 3025 (Part 43): 1992 RA 2019 |
| 34 | Selenium as Se | mg/l | <0.001 | 0.01 | IS 3025 (Part 56):2003 RA 2019 or IS 15303* |
| 35 | Silver as Ag | mg/l | <0.02 | 0.1 | Annex J of IS 13428 |
| 36 | Sulphide as H ₂ S | mg/l | <0.05 | 0.05 | IS 3025 (Part 29):1986 RA 2019 |
| 37 | Zinc as Zn | mg/l | <0.05 | 5 | IS 3025 (Part 49):1994 RA 2019 |
| 38 | Cadmium as Cd | mg/l | <0.001 | 0.003 | IS 3025 (Part 41): 1992 RA 2019 |
| 39 | Cyanide as CN | mg/l | <0.01 | 0.05 | IS 3025 (Part 27):1986 RAA 2019 |
| 40 | Lead as Pb | mg/l | <0.001 | 0.01 | IS 3025 (Part 47): 1994 RA 2019 |
| 41 | Mercury as Hg | mg/l | <0.001 | 0.001 | IS 3025 (Part 48):1994 RA 2019 |
| 42 | Molybdenum as Mo | mg/l | <0.02 | 0.07 | IS 3025 (Part 2) |



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Page 1 of 2

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Report No. : WCS230402C

| 43 | Nickel as Ni | mg/l | <0.01 | 0.02 | IS 3025 (Part 54): 2003 RA 2019 |
|----|---|------|---------|--------|---------------------------------|
| 44 | Polynuclear aromatic hydro- carbons as PAH | mg/l | <0.0001 | 0.0001 | АРНА 6440 |
| 45 | Total arsenic as As | mg/l | <0.001 | 0.01 | IS 3025 (Part 37):2022 |

Reviewed by

(Mr. Bijaya Kumar Chahataray)

Authorized Signatory

(Mr. Pradeept Mohapatra)



- The results relate to the sample received in respect to the Parameters tested.
- Liability for return of sample ceases after 7 days from the date of Test certificate.
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 - -END OF REPORT-









| | TEST RE | PORT | | TC-11225 |
|---|----------------------------------|---|--|--|
| : | WCS230403 | Issue Date | | 17.04.2023 |
| : | TC112252300000043F | | | |
| : | National Aluminium Company Li | mited | | |
| : | Smelter & Power (S&P) Complex | | | |
| | Angul-759145, Odisha | | | |
| : | Coal Mining North Side Seepage | Water | | |
| : | Surface Water | Date of Sampling | : | 07.04.2023 |
| : | WCS/QSP/SAMP (WATER) | Date of Receiving | : | 08.04.2023 |
| : | Temperature 29 °C, Clear Weather | Sample ID No | : | WCS0423W04 |
| 1 | WCS Laboratory | Quantity of Sample | : | 1 Ltr |
| : | 10.04.2023 to 15.04.2023 | Sample Condition | : | Good |
| | | WCS230403 TC112252300000043F National Aluminium Company Li Smelter & Power (S&P) Complex Angul-759145, Odisha Coal Mining North Side Seepage Surface Water WCS/QSP/SAMP (WATER) Temperature 29 °C, Clear Weather WCS Laboratory | TC112252300000043F National Aluminium Company Limited Smelter & Power (S&P) Complex Angul-759145, Odisha Coal Mining North Side Seepage Water Surface Water Date of Sampling WCS/QSP/SAMP (WATER) Date of Receiving Temperature 29 °C, Clear Weather Sample ID No WCS Laboratory Quantity of Sample | WCS230403 Issue Date : TC112252300000043F National Aluminium Company Limited Smelter & Power (S&P) Complex Angul-759145, Odisha Coal Mining North Side Seepage Water Surface Water Date of Sampling : WCS/QSP/SAMP (WATER) Date of Receiving : Temperature 29 °C, Clear Weather Sample ID No : WCS Laboratory Quantity of Sample : |

| SI. No. | Parameter | Unit | Result | Test Methods |
|------------|---|-------|-----------|---|
| 1 | Odour | | Agreeable | IS 3025 (Part-5): 2018 |
| 2 | Colour | Hazen | < 5 | IS 3025 (Part-4): 2021 |
| 3 | pH Value | | 7.835 | IS 3025 (Part-11): 2022 |
| 4 | Specific Conductivity | μs/cm | 794.1 | IS 3025 (Part-14): 2013 |
| 5 | Dissolve Oxygen as DO | mg/l | 6.1 | IS 3025 (Part-38): 1989 |
| 6 | Biochemical Oxygen Demand as BOD | mg/l | <2 | IS 3025 (Part-44): 1993 |
| 7 | Total Suspended Solid as TSS | mg/l | < 5 | IS 3025 (Part-17): 2022 |
| 8 | Oil &Grease | mg/l | < 4 | APHA 23rd Ed. (5520-B): 2017 |
| 9 | Total Hardness as CaCO3 | mg/l | 256 | APHA 23rd Ed. (2340-C): 2017 |
| 10 | Chloride as Cl | mg/l | 65.98 | IS 3025(Part-32): 1988 RA 2019 |
| 11 | Sulphate as SO ₄ | mg/l | 45.93 | IS 3025 (Part-24, Sec-1): 2022 |
| 12 | Nitrate as NO3 | mg/l | <1 | APHA 23rd Ed. (4500-NO3-B): 2017 |
| 13 | Fluoride as F | mg/l | < 0.02 | APHA 23 rd Ed. (4500-F-D): 2017 |
| 14 | Calcium as Ca | mg/l | 33.67 | APHA 23rd Ed. (3500-Ca-B): 2017 |
| 15 | Magnesium as Mg | mg/l | 41.8 | APHA 23rd Ed. (3500-Mg-B): 2017 |
| 16 | Iron as Fe | mg/l | 0.03 | IS 3025 (Part-53): 2003 |
| 17 | Hexavalent Chromium as Cr ⁺⁶ | mg/l | < 0.01 | IS 3025 (Part-52): 2003 |
| 18 | Sodium as Na | mg/l | 4.9 | IS 3025 (Part-45): 1993 |
| 19 | Potassium as K | mg/l | 7.2 | IS 3025 (Part-45): 1993 |



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| Repo | ort No. : WCS230403 | | | |
|------|----------------------------------|----------------|-----|---------------------------|
| 20 | Alkalinity as CaCO3 | mg/l | 230 | IS 3025 (Part-23): 1986 |
| 21 | Chemical Oxygen Demand as COD | mg/l | 2.4 | IS 3025 (Part-58) : 2006 |
| 22 | Total Dissolved Solid as TDS | mg/l | 373 | IS 3025 (Part-16): 1984 |
| 23 | Turbidity | NTU | 1 | IS 3025 (Part-10): 1984 |
| 24 | E.Coli | MPN/ 100 m | <1 | IS 1622 : 1981 |
| 25 | Faecal Coliform | MPN/ 100 m | <1 | IS 1622 : 1981 |
| 26 | Total Coliform | MPN/ 100 ml | 3 | IS 1622 : 1981 |

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Reviewed by (Mr. Bijaya Kumar Chahataray)

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Maranovi Port Authorized Signatory for Microbiology (Mrs. Manaswini Rout) Authorized Signatory for Chemical (Mr. Pradeept Mohapatra)

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C Liability for return of sample ceases after 7 days from the date of Test certificate.

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